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**SOCIO-ECONOMIC INEQUALITY AND ETHNO-POLITICAL CONFLICT:
EVIDENCE FROM KENYA**

By

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ABSTRACT

This study examines the influence of socio-economic inequalities on the probability of conflict in Kenya and aims to synthesise various causal hypotheses in the literature. This research extends to a regional analysis of a cross-national sample to understand the extent to which structural cleavages account for a cause of potential conflict in Kenya. The post election violence that emerged in 2008 shed light on the urgency for policy reforms to address the root causes of what was viewed as an imminent outbreak of violence. Various analysts trace the origin of conflict to nepotism, ethnic stratification, historical injustices, poor governance and disparities in resource allocation. Given these sources of dissent, this study proposes that the most fundamental factors that considerably influence the probability of conflict in Kenya are pervasive poverty and extreme inequality, intensified by ethnic divisions. Based on Kuznets theory, we argue that the booms of economic growth experienced from 2003 perpetuated the stark economic and social inequalities prevalent in Kenya. As a result, there is strong evidence that suggests that these sharp inequalities fuelled the post-election violence and deeply influence the probability of conflict in Kenyan society. Another key contribution from the study is the conclusion that the existence of sharp horizontal inequalities result in a bias towards ethnic conflict. It is imperative to identify the underlying causes of conflict so as to neutralise polarisation which exacerbates tension and breeds further conflict. In light of this view, the probability of conflict in Kenya can be minimised effectively and such mitigation can be used as a mechanism for future growth and economic development in Kenya.

LIST OF ACRONYMS

CRISE	Centre for Research on Inequality, Human Security and Ethnicity
DHS	Demographic Health Survey
GDP	Gross Domestic Product
HDI	Human Development Index
KANU	Kenya African National Union
KNBS	Kenya National Bureau of Statistics
KIBHS	Kenya Integrated Household Budget Survey
ICRG	International Country Risk Guide
IMF	International Monetary Fund
ODM	Orange Democratic Party
PNU	Party of National Unity
PRS	Political Risk Survey
SAP	Structural Adjustment Programme
SID	Society for International Development
STATA	Statistics/Data Analysis
UNDP	United Nations Development Programme

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Since the advent of independence from British colonial rule in 1963, Kenya has been one of Africa's success stories albeit the sporadic episodes of conflict or communal violence witnessed over the past few decades. It has been observed that election years generally tend to be marred by greater incidences of social unrest and dissent. More specifically, elections in Kenya have been a trigger for localised violence and displacement since the introduction of multi-party politics in the early 1990s. The influence of political outcomes in an economy as a means for appropriating state resources tends to provide fertile ground for tension and conflicting interest, which often transforms into violent conflict. The most recent post-election violence that emerged in Kenya in early 2008 claimed thousands of innocent lives and left hundreds of thousands of individuals' homeless, the magnitude of this violence was termed the 'worst humanitarian crisis' since independence. In most developing countries stifled by corruption, a key driver of electoral success is support from regional ethnic power bases who are in turn rewarded with opportunities in public office and an inequitable access to national resources.

On one hand, it has been argued that tribalism and nepotism are the roots of the deep divisions in Kenyan society that caused this crisis. Other scholars propose that disparities in resource allocation, poor governance, poverty and abrogation of responsibility by politicians and professionals are potential explanations for the scale of this conflict. Ethnic stratification and ever-threatening ethnic cleansing have further been linked to this outbreak of political conflict, while others attribute historical injustices as one of the immediate causes of the violence. Over the past decades, ethnic divisions have been invoked to mobilize individuals towards violence. However, there is strong evidence that suggests that conflict in Kenya stems from class divisions rather than ethnic divisions. On a regional level, it is found that there exist sharp economic inequalities which challenge the notion that structural factors such as ethnicity solely motivate violence in Kenya. On the whole, while polarization can occur in any type of conflict (class or ethnic), it has the most damaging effects in large-scale inter-group, public policy, and international conflicts.

The economic outlook in Kenya has been positive during the past decade, and it is observed that the upsurge in economic growth occurred after a change in political regime when incumbent President Mwai Kibaki took office in December 2002 and implemented pro-economic growth

policies. Kibaki aimed towards consolidating democracy in Kenya and implementing appropriate redistributive reforms and policies which were geared towards boosting economic development. Economic theory postulates that the enhanced economic activity that development generates is the only way to reduce inequalities, particularly in a context of rapid demographic growth. In other words, it is easier to work on a fairer distribution of a growing pie than of a shrinking one. However, economic development itself generates a number of strains on societies that lie at the very roots of conflict. At least initially, economic growth tends to increase inequalities within a country, as some communities or individuals benefit from rising income while others are left behind. As individuals feel marginalized and less privileged, polarization between the haves and the have-nots persists which inevitably breeds conflict.

Various sources of literature lend support to the risks of development and the violent social feedback from those who are left behind. While it makes intuitive sense that economic inequality may breed political conflict, almost no work has been done to explain such a conjunction within the context of Kenya. Perhaps one reason for this dearth of interest is that traditionally, a division based on economic gain has not been seen as a reliable predictor of political beliefs and partisanship in the mass public, especially in comparison to other structural factors such as ethnicity or region. Recent political problems that threaten to fragment Kenya require analysis that goes beyond ethnicity as portrayed in the media. It is therefore imperative to identify the roots of conflict so as to mitigate the channels for polarisation and counteract the negative effect of conflict for the sustainable attainment of macroeconomic objectives in Kenya.

1.2 Statement of the Problem

Fundamentally, the main factors that considerably influence the likelihood of conflict since Kenya's independence are pervasive poverty and extreme high inequality. Although, it has been argued that tribal warfare and ethnic cleansing were the key contributors to the wave of violence that shook the Kenyan economy during and after the presidential elections at the onset of 2008. A historical analysis of the underlying causes of such violence reveals that the people's tribal identity was not the root of violence in Kenya. To better understand the roots of the post-election violence that broke out in 2008, we revert to the preceding election year of 2002 and trace the origin of this conflict to sharp socio-economic inequalities, further characterised by ethnic salience. Incidentally, marginalised groups who were optimistic that the change of political regime in late 2002 would reallocate resources equitably in their favour, may have felt that five

years on they were still in an impoverished state and this may have infused resentment which translated into violence to reflect economic grievances.

To this end, we employ a logistic regression modelling approach to explore the odds in favour of conflict occurring due to prevalent sharp economic inequalities, which can be further exacerbated by ethnic fragmentation in Kenya. Using this econometric technique, this research seeks to ascertain the key factors that influence the probability of conflict in Kenya. Therefore, the main purpose of this study is to document a strong and robust relationship between economic inequality and the probability of conflict, following a political transition in 2002/3 that imposed pro-economic growth policies. Generally, countries that exhibit stark differences in income or wealth distribution and disparities in resources allocation following booms in economic growth result in a bias towards polarization that exacerbates tension and breeds conflict.

1.3 Research Objectives

1.3.1 General Objective

The key objective of the study is to fill the gap in academic literature on the influence of socio-economic inequalities on the probability of conflict in the Kenyan context. This study further seeks to assess whether in the presence of such inequalities, individuals are predisposed to form ethnic alliances based on the hypothesis that ethnic alliances display high within-group economic inequality. This secondary objective allows us to document the extent to which structural factors such as region are viewed as valid explanations for conflict potential in Kenya. From the findings in this study, we aim to understand the extent to which class divisions account for a higher propensity of conflict in society, relative to structural causes.

1.3.2 Specific Objectives

In order to achieve the stated general objective the study will meet the following specific objectives:

- i. To assess the impact of economic inequalities on political conflict in Kenya
- ii. To document inter-regional polarization of income on the probability of conflict
- iii. To isolate the analysis of the prevalence of inequalities on a regional level and the relative difference to national level statistics as an influence on the probability of conflict

1.4 Research Questions

The study will address the following questions so as to achieve at the research objectives:

- i. What is the impact of economic inequality on the probability of conflict in Kenya?
- ii. In the presence of economic inequality, is there a bias towards conflict based on ethnic lines?
- iii. To what extent does the prevalence of inequalities on a regional level effect the probability of conflict and;
- iv. On a national level, what is (are) the key attribute (s) associated with the probability of conflict?

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CHAPTER TWO: THEORIES OF THE POLITICAL ECONOMY OF REDISTRIBUTION AND ECONOMIC MODELS OF CONFLICT.

In this chapter, an analysis of the theoretical foundation and empirical literature supporting this study is undertaken. Much literature has focused on the theoretical underpinnings for explaining the association between economic inequality and political conflict. It is imperative to understand the derivations of these two concepts, as the use of varying measures to capture these constructs will result in differing statistical associations. As a starting point, we illuminate the definitions of conflict and inequality as intended in this study. Subsequently, we investigate the theoretical expectations of the impact of inequality on ethno-political conflict, in light of the Kuznets theory and shed light on empirical evidence of this relationship in other developing countries. Thereafter, various standard definitions and measures as used in the literature are discussed. The key theorists who explore the political economy of redistribution are Acemoglu and Robinson (2001), Esteban and Ray (2008) amongst other scholars presented in section 2.2. The chapter also displays a conceptual framework which is a model showing the interrelationships of theories highlighted in the literature review that will enable the research achieve the objective of the study.

2.1 Definitions of conflict and inequality

In this study, conflict is defined as 'political' based on supporting evidence in the literature by Easton (1953) who defines politics as the authoritative allocation of resources. Lasswell (1935) adds on that politics encapsulates 'who gets what, when and how' thereby indicating that an unequal allocation of resources or economic gains in countries is a major cause for political conflict. We shall also classify the conflict as 'ethnic' based on Horowitz (2000) definition of ethnic conflict as conflict along ethnic lines whereby individuals are chosen by group membership and mobilized towards political ends (Gurr and Harff, 1994). This classification of group identity is relevant to this case study which explores the salience of ethnic divide in the presence of economic inequalities, in explaining the probability of conflict. Incidentally, we are interested at understanding the conflict over the distribution and allocation of economic resources between regions which makes it appropriate to express it as ethno-political conflict.

Stewart (2007) presents a number of significant dimensions of economic inequalities in her article on addressing inequality amongst groups where a distinction is made between horizontal and vertical inequalities. The former deals with inequalities that prevail between groups and the latter refer to individual-specific inequalities. Furthermore, Stewart (2007) breaks down the

elements of horizontal inequalities into economic, social, political and cultural inequalities. More relevant to this study are the first two dimensions which encapsulate inequalities in income, employment opportunities, access to a range of services such as education, health, and housing amongst others. Kanbur (2007) adds on that the dimensions of inequality can be decomposed further into a between-group and within-group component. These two components are elaborated upon as inequality which stems from differences of say, income relative to the mean of that group and the second component draws on the differences between the means across groups. Kanbur (2007) concludes that where conflict is perceived to be associated to actual differences between groups, it links to the between-group inequality and attention should be focused on exploring this link.

2.2 Theoretical associations between conflict and inequality

It is widely held in the literature that economic inequalities among groups have significant and at times adverse consequences, some of which cause much resentment between groups that manifest into violent political protest. Stewart (2007) underlines some of the repercussions of horizontal inequalities such as the effect on the well-being of members of deprived groups, hindering the full realization of economic potential, preventing efforts by policy-makers to eradicate poverty and an increased risk of violent conflict. Group inequalities lead to social exclusion which leaves the deprived group feeling marginalized on multiple levels. It is held that the evolution of structural attributes such as race, religion, caste, ethnicity or even region is compounded by economic, social, cultural, political leaders and educators who advocate for increased equality in the distribution of resources in their favour. Once group distinctions are defined by unequal access to resources, it puts to question the economic and social welfare of the marginalised groups.

Lichbach (1989) provides six factors which account for increasing interest in the study of income and wealth distribution as a theoretically significant reasoning for political conflict and social unrest. Generally, conflict participants are divided into two groups: the haves versus the have-nots. Lichbach (1989) articulates that the privileged group propagate economic inequality by defending the status quo distribution of resources whereas the marginalised group seek economic equality by attacking the status quo distribution of resources. Another factor which has increased popularity of this study is that economic inequality is viewed as logically associated to social cleavages between classes, religions, regions, genders, educational and occupational strata, linguistic, ethnic and communal groups. This view is supported by Kanbur (2007) who maintains further that economic inequality is a natural concomitant of economic processes. Muller

(1985) proposes two key hypotheses on the effects of income inequality on political violence. The first hypothesis, the relative deprivation hypothesis, states that there is a direct relationship between collective political violence and most forms of deprivation-induced dispute. Alesina and Perotti (1996) corroborate these hypotheses by expressing that socio-political instability increases with income inequality.

Another important trajectory of understanding is the link between land inequality and conflict. Muller (1985) observes that unregulated change in the access of national resources and use in disputed areas are attributed as one of the causes of conflict and tribal clashes in developing countries. According to the resource mobilization hypothesis theorised by Muller (1985), groups who have unequal access and control of land resources develop strong dissenting organisations that can instigate political violence. Discontent arising from maldistribution of land and unregulated ownership is a crucial factor influencing political violence. Therefore, the government has a vital role to play in clearly defining property rights and regulating land ownership, say by issuing title documents to all individuals who have purchased or inherited land that has directly been allocated to them in ensuring the equitable distribution of land resources. In order to minimise land disputes, the government should ensure that land occupancy rights are enforced and protected to mitigate against severe disruptions of social relations which could hamper economic activity. In essence, the risk of conflict is increased when land tenure issues are left unresolved as the property rights of the legal owner are contested and not protected.

On the contrary, Acemoglu et. al (2001:953) explain that the radical redistribution of assets such as land through land reform programs may adversely have distortionary results because the elite may mount a coup to avoid such reforms. Nonetheless, the authors conclude that other forms of asset distribution may be used to stabilize differing regime types. In this view, Alesina and Drazen (1991) describe the process leading to a stabilization as a war of attrition between socioeconomic groups, where any delays in stabilizing an economy occur due to conflicting distributional objectives.

Kanbur (2007) argues further that the implications of inequality for internal security materialize when unequal outcomes align with socio-political cleavages. In most economic processes, a trade-off between equality and equity arises in pursuit of efficiency. Lichbach (1989) highlights that the inequality-conflict puzzle is best resolved by applying a normative analysis and taking into consideration normative trade-offs that society face such as the much debated trade-off of efficiency for equity or inequality over conflict. However, increasingly persistent inequality may have a trickle-down effect on other economic phenomena such as investment, which breeds

disorientation in social order. When unequal outcomes arise and are integrated with the salience of group distinctions, this contributes further to a collapse of social order. In this view, Mogues and Carter (2004) explain that inequality is more destabilizing when socially embedded. Interestingly, the extent to which inequality is destabilizing depends on the level of economic growth in an economy. This link follows from Kuznets (1955) hypothesis that economic growth raises the incomes of skilled individuals relative to that of the unskilled which fuels greater inequality. In terms of Kuznets (1955) theory, a country's income inequality perpetuates and worsens when a country begins developing economically. After this initial drawback, these countries tend to experience a trickle-down effect when the rich begin investing more in the economy and the nation's wealth begins to disperse across divergent classes. Eventually, income levels equalize and people are wealthier than they would have otherwise been before the growth spurt emerged. Kuznets (1955) theory has been applied by major financial institutions such as the IMF who implement structural adjustment programs (SAP's) on heavily indebted third world countries which initially drastically worsen socioeconomic inequalities before this hypothesised trickle-down effect can be felt on a national level (Rorty, 1991).

Lichbach (1989) examines literature which explores the links between an unequal distribution of wealth and the likelihood of phenomena such as revolution, civil war, terrorism, demonstrations and coups than those with a more equal distribution. To validate these links, major theorists of conflict such as Gurr (1970) and Tilly (1999) ascertain that economic inequality is at least a potentially important cause of dispute. Other analysts maintain that the omission of economic inequality as an explanatory variable in explaining conflict in most cross-national quantitative studies, result in major specification errors. For example, Thorbecke and Charumilind (2002) consider income inequality as a crucial factor leading to social conflict and political instability. Moreover, it is argued that high inequality levels could influence democratization, instigate rent-seeking opportunities and lead to higher probability of revolution. However, Thorbecke et. al (2002) also note that to test whether income inequality increases the risk of conflict entails considering other variables such as education attainment, historical background, ethnicity origins, geography amongst others factors to further explain this link. Collier (2000) provides evidence of countries characterised by large inequalities, coupled with geographic dispersion and a greater dominance of ethnic groups or religious groups, as being more inclined to engage in conflict.

On the contrary, there is evidence which nullifies any direct causal link between standard measures of inequality and conflict. For example, Lichbach (1989) argues that there has been vast speculation on the actual association between economic inequality and political conflict

leading to ambiguous and inconclusive findings. As a result, this provides a good justification to investigate differing theoretical and empirical frameworks. Kanbur (2007) postulates that when income differences align with structural cleavages, the combination exacerbates tension and conflict in society. In his understanding, when society is polarized into a small number of groups with distinctive identity this provides a strong stimulus for conflict such that any small adjustments in the income distribution between groups results in volatile outcomes. In opposition to this view, other theorists such as Collier and Hoeffler (1998) and Fearon and Laitin (2003) document no causal effect of inequality alone on civil conflict onset. Additionally, Nagel (1974) explains that when inequality is high and income differences are considerable, the poor begin to lose a framework for social comparisons and the probability of conflict declines at high inequality levels.

Overall, the literature mainly holds that poverty and inequality breed conflict. Although, we are strictly interested in looking at inequality in this study, it is worth noting that there is evidence that those who direct extreme forms of violence are not themselves impoverished. In most instances, it has been found in the literature that violent conflict is a feature of poorer than richer societies. However, theory also postulates that elites can mobilize groups towards conflict and further provide the means to do so. Collier (2000) argues that the economic theory of conflict postulates that the determining factor of whether a country experiences civil war is the extent to which rebel organizations are financially viable. In other words, the extent to which such organizations can sustain themselves financially is a valid indicator of the likelihood of conflict and is of paramount importance relative to the motivation of conflict.

Esteban and Ray (2008) review the salience of ethnic conflict and explore a wealth of literature that reveals the extent to which class divisions are the main cause of social conflict relative to ethnic divisions. The authors hypothesise that the salient of ethnic conflict is heightened when accompanied by sharp economic inequalities and further postulate that such salience stems from two key factors. The first factor points to a hypothesis that ethnic groups experience marked within-group income differences. These income differences “weaken within-group coordination” and reduce the deprived group members propensity to mobilize collective action (Esteban and Ray, 2008: 2186). As a result, the elite within the group are better able to mobilize the deprived majority by contributing financial resources for conflict and in return, acquiring cheap ‘conflict labour’. This channel contributes to a bias towards ethnic conflict. The second factor is emphasised by Kapferer (1998) where a conflict study in Sri Lanka is undertaken and reveals that the conflict protagonists comprised gangs of impoverished and unemployed youth who attended protest demonstrations and took part in destructive violence. These factors are

validated by Zhang and Kanbur (1999) who add that polarization is linked to inequality in a complex manner. In other words, the patterns of conflict and inequalities are related in a nonlinear way such that there is a positive association between conflict and the level of between-group inequalities. On the other hand, the authors argue that there is a negative relationship between conflict and the level of inequalities within groups. Østby (2005) concludes that inequalities that are characterized by structural attributes (such as ethnicity, religion or region) may further increase group grievances and facilitate mobilisation for conflict.

On a national level, it is hypothesised that wealthier areas are not any less likely to experience levels of communal violence. However, as explained by Esteban and Ray (2008), the association between inequality and conflict stems from the means by which the rich can coordinate dissent by financing the poor who contribute labour and controlling the groups efforts to narrow income gaps and strengthening ethnic alliances. Thus, to avoid class unrest the rich effectively provide a driving force for strong ethnic coalitions. It must be noted that the nature of the conflict is viewed along ethnic lines or based on class divisions. In characterizing conflict forms, Fedderke and Kularatne (2008:12) define the conditions under which the rich will redistribute to the point of equality with the poor and provide a detailed extract on how two groups in society are engaged in strategic interaction in the process of redistribution. It is found that privileged members of society can either allocate resources towards their own well being or enhance the productive capacity of deprived groups. The rationale involved in this decision-making involves assessing the trade-off between the benefit of redistributing human capital to the underprivileged and increasing their productive capacity relative to the cost of greater political aspirations of the underprivileged which diminishes the influence of the rich on output extracted produced by the economy while still increasing consumption opportunities for the rich.

This rationale is further corroborated by Acemoglu et. al (2001) who provide examples of educational reforms that increase the productive and hence, earnings capacity of the poor and deliver greater economic equality which tend to consolidate democracy. A shift towards greater democracy or redistributive reforms provides considerable benefits at the expense of an increased likelihood of conflict. As pointed out by Lichbach (1989), the study of conflict analysis entails normative trade-offs which are also captured in the literature by Fedderke and Kularatne (2008). The theory of political transitions postulated by Acemoglu et. al (2001) articulates that regime types play an important role in shaping the incentives of rich and poor towards their propensity for conflict. Unequal wealth decreases the likelihood of consolidating a democracy owing to the redistributive nature of this regime type which promotes economic equality to achieve a more egalitarian distribution of assets. Furthermore, the authors investigate

how the elite use their power to threaten revolution depending on the opportunity costs involved in mobilizing protest. It is hypothesised that the rich elite prefer nondemocratic regimes which limit redistributive reforms, as such inequality emerges as a fundamental determinant of political instability as it encourages the elite to challenge efforts to consolidate democracy.

2.3 Empirical Evidence from Developing Countries

There is strong evidence across countries which shed light on the significant relationship between horizontal inequalities and the likelihood of violent conflict. Economic inequality has been the main focus of studies undertaken on the revolutions that occurred in Iran, Rhodesia and in Columbia as investigated by Midlarsky (1988). There have also been a number of studies carried out that indicate that the location of conflict within a country is related to the extent of group inequality in that location such as in Indonesia and Nepal. In an Indonesian case study undertaken by Mancini (2005), he explains that while the ethnic diversities that exist in Indonesia are greatly influenced by its colonial history, a greater source of conflict has been sharp economic inequalities. The author explains that Indonesia's economy expanded rapidly at an average rate of 4.5% in 2002 and this expansion was simultaneously accompanied by increasing inequality. Furthermore, these inequalities were felt within-region as opposed to between regions. Booth (2000) adds on that the prevailing inequalities were fuelled by the 1970s oil boom and Cameron (2001) notes that about two thirds of total inequality in Indonesia occurred in the most industrial and oil rich districts.

Fedderke and Kularatne (2008) outline models of conflict and redistribution for South Africa and Sri Lanka. Empirical findings for South Africa and Sri Lanka reveal that political aspirations are related to human capital transfers which are measured by enrolment rates at the secondary education level are further associated with the proportions of the have's relative to the have-not's. Economic theory postulates that education plays a vital role in the processes of economic growth. There is supplementary empirical evidence which suggest that such growth processes create greater divisions in society which leave identified groups behind (say the less-educated) relative to the advance of other groups, provoking the likelihood of conflict as a final outcome. The emergence of conflict may reverse the initial intended growth process, rendering the entire process redundant.

Empirical evidence from other developing countries such as India identifies that the probability of conflict stems from economic development which has left behind tribal populations of poor states. In Mexico, growth that was biased to the Southern region resulted in a threat of

revolution by the Chiapas. A similar pattern prevailed in China where the rate of attendance of the masses in protests and demonstrations has been on the rise, in line with economic booms in the economy. It has also been found that group identification played a significant role in the initial stages of the civil war in Sri Lanka whereby the economic grievances of the minority Tamil community were overshadowed by the majority Sinhala community in suppressing efforts to reverse the unfair treatment of the Tamils during the colonial period. The literature holds that there are numerous theoretical and empirical reasons to believe that group identification is strongly linked to identification of the mean income of that group providing a basis for between-group conflict. Further examples of this link are evidenced by riots in Malaysia in the late 1960's, the enduring Hindu-Muslim religious divide, revolutions in Latin America, the Nigerian civil war amongst others are examples of conflicts that arose due to group economic discrimination (Ballentine and Sherman, 2003). Brubaker and Laitin (1998:424) lend support to conflict that emerged in the Soviet and Yugoslav post Cold-War cases, as a result of what is referred to as the 'ethnicization of political violence' evidenced by an increase in the incidence of nationalist violence.

On the other hand, a number of qualitative case studies have shown that societies that are considered highly unequal in terms of income distribution such as Thailand, Pakistan and Brazil are not regularly marred by major political conflict. Mancini (2005) provides the example of Brazil which has remained relatively peaceful and stable despite its stark income differences. However, Stewart (2002) documents examples of high crime rates in Brazil in explaining how certain elements of horizontal inequality incite some kind of conflict. Yet, Alesina and Rodrik (1994), in addition to Persson and Tabellini (1992) contrast further the positive association between conflict (measured by political stability) and income inequality. The authors oppose this conventional association in observing a negative link between income and political stability, and argue that these results coincide with experiences of East Asian miracle countries. Incidentally, these East Asian countries experienced more political stability and less income inequality in comparison to Latin American countries at similar income levels.

2.4 Shifting influences on group identification that aggravate conflict

There are a number of sources of influence that shape group identification which can trigger mobilization for violent conflict. Stewart (2007) highlights that ideology has become a less important source of identity and political mobilization, such that the increased probability of violent conflicts is derived from causes linked to ethnicity. In her view, ethnic distinctions have been strongly attributed as influences of conflict. On the contrary, Rubin (1994) asserts that the

primary influence originates from family as children tend to adopt and inherit their parents' ideological values. Some theorists have argued that family tends to be the strongest, most influential force which exists over the lifetime. Furthermore, it is alleged that peers have a significant impact on group identification. Dey (1997) explains that friends often, but not necessarily, have the advantage of being part of the same generation, which collectively develops a unique set of societal issues. Dey (1997) argues further that socialization is the process through which individuals acquire knowledge, habits, and value orientations that will be useful in the future. The ability to relate on this common level points towards the means to shape ideological growth.

Brubaker and Laitin (1998:425) maintain that the motivation behind conflicts has somewhat shifted from ideological reasons to "a marked ethnicization of violent challenger-incumbent contests". This corroborates Lichbach (1989) view who asserts that the American, French, Russian and Chinese Revolution which revolved around nationalism, liberalism and socialism were actually based on differing ideas of equality. On the extreme end of the spectrum, one of the adverse consequences of sharp group inequalities is mobilizing of groups towards violent conflict and we briefly consider the channels by which conflict transforms to violence. Stewart (2007) maintains that sharp group inequalities fuel violent group mobilization and ethnic conflicts are more likely by providing powerful grievances for leaders to use to mobilize people. This takes place when group leaders mobilize groups using cultural markers which point towards exploiting the group to reverse its inferior position. According to Kriesberg (1998), as conflict emerges, enemy images materialize and stereotypes damage the relationship between adversaries. Important lines of communication and interaction that are normal to peaceful relationships are cut off, and trust diminishes. As parties begin to attribute their grievances to the other side, they often reduce the number of non-conflictual relations and interactions that they have with that party. Adversaries tend to become increasingly isolated from each other, and any inter-group communication is channelled through more antagonistic lenses.

Furthermore, as parties belonging to deprived groups have fewer ties to individuals from the other group, they may feel freer to employ more severe actions against that group. Dougherty and Phaltzgraff (2001) elaborate that radical positions are further reinforced by group homogeneity and cohesiveness. Kriesberg (1998) notes that adversaries with little internal diversity are more prone to an escalation of conflict which deepens polarization. This is because homogeneity makes it less likely that a group will consider alternatives to the severe tactics being advocated or employed by extremists. On a macroeconomic level, Alesina et. al (1991)

document evidence that heterogeneity in any population is a significant factor in explaining delays in the adoption of fiscal adjustment programs. While some scholars of intergroup conflict regard polarization and stratification as inevitable in interethnic relationships, others see it as the result of social mobilization or manipulation by political elites. Rothchild et. al (2003) postulate that leaders can use identity as a 'rallying cry' by calling for mobilization and collective action along nationalistic or ethnic lines. Kriesberg (1998) agrees with this by stating that in order to foster homogeneity and build support for their cause, such leaders may portray the adversary as a grave threat to the vital interests and identity of individuals belonging to their group. Thus, political leaders can perpetuate conflict by mobilizing individuals belonging to their own ethnic or caste identities and incite violence towards meeting political ends. Against the backdrop of increasing inequality in society, this breeds a fertile ground for conflict.

2.5 Standard measures of conflict and economic inequality

The economic literature provides a series of measures used to quantify economic inequalities and conflict. Hagmeyer-Gaverus (2003) explains that there are potential early warning indicators for conflict which include nine main indicator categories namely: justice and human rights, socio-cultural, internal security setting, geopolitical, socioeconomic, military and security, environment and resource management, governance and political stability, regional and country specific variables. These broad categories are intended to measure changes in economic and political performance while highlighting ethnic issues. Most studies have drawn on these broad categories in formulating indexing models which encapsulate structural conditions, further decomposed into general and specific indicators of conflict. According to Ebata (2001), structural conditions are "deep-rooted and systemic features that structure the relations between people and thus are not fluid and amenable to quick or easy change". General indicators have a general applicability in all regions in a cross national sample such as major income disparities or ethnic oppression whereas specific indicators carry a greater weight in explaining specific regional setting differences based on colonial or customary heritage.

As societies become increasingly heterogeneous, the significance of inequalities between groups rises. In light of the distinct ethnic and class groups evident in Kenya (these group identifications will be elaborated on further in chapter 3), it is important to understand how to measure these horizontal inequalities. It is equally important to understand the standard measures of inequalities between individuals as these reflect the impact on the well being of members in a society. An important contribution by Horowitz (1985) concludes that divided societies are more

likely “horizontally differentiated by ethnic or religious markers” as opposed to the vertical wealth or income markers which prevail in caste divisions. The literature articulates that if a sample survey from which the national distributions are calculated allows for group identification by any of these groups, this allows for cross national analysis which necessarily allows for robust findings. Therefore, looking at sub-group distributions or other lower levels of aggregation than national level statistics is of paramount importance in explaining the incidence of conflict.

Empirically speaking, much of the literature defines the concepts of conflict and inequality using nationally representative sample surveys of household income or expenditure, whereby information can be collected on household income level as well as including a range of socio-demographic information such as age, gender, ethnicity, occupation status amongst other useful information. Using household level surveys, Kanbur (2007) explains that the national distribution of income can be inferred by allocating each individual in a household a monetary value from the dataset as a measure of the well being and thereafter construct the income distribution for the entire sample thereafter. This method depicts the spread of distribution which is relevant in providing an indication of inequality. Consider a society distinguished into mutually exclusive groups as defined by ethnicity, region, caste or religion, and then each distinct group is allocated its income distribution or similar inequality measure such as Gini coefficient.

One important caveat to consider in using inequality measures such as Gini coefficients based on individual income is that this measure fails to capture other important elements of inequality such as access to political power, education, housing, land and employment (Mancini, 2005). Sen (1980) explains that inequality on other levels such as access to education, land and housing may be at least as important as inequality of outcomes like income, consumption or wealth. Furthermore, this approach is challenged on the account that it fails to capture group identity which is a necessary concomitant of social stability. However, Reynal-Querol (2002), Esteban and Ray (1999) and Mancini (2005) provide appropriate inequality measures which depend on a number of factors such as group population share amongst other factors and this is explained further in defining our variables for this study in chapter 4. With this in mind, it is argued that the chosen horizontal inequality measures such as a group-based coefficient of variation by Mancini (2005) and polarization measure by Reynal-Querol (2002) capture differences between culturally defined groups in economic, social and political spheres and play a crucial role in determining the location and timing of violent conflict on the basis of prior qualitative research.

CHAPTER THREE: THE CASE OF KENYA

3.1 Historical Overview

The founding 'father' and first president of Kenya, the late Jomo Kenyatta led Kenya from independence in 1963 until his death in 1978, when President Daniel Toroitich arap Moi assumed the presidency in a constitutional succession governed under the KANU ruling party. Upon Kenyatta's death, a legacy of economic stability and regional leadership had been inherited in Kenya. After independence, Kenya promoted rapid economic growth through public investment, encouragement of smallholder agricultural production, and incentives for private (often foreign) industrial investment. Gross domestic product (GDP) per capita grew at an annual average of 6.6% from 1963 to 1973 which was stimulated primarily by the agricultural sector. Agricultural production grew by 4.7% annually during the same period, stimulated by redistributing estates, diffusing new crop strains, and opening new areas to cultivation (World Bank, 2008). Between 1974 and 1990, however, Kenya's economic performance declined. This was primarily due to a decline in agriculture which was linked to inappropriate agricultural policies, insufficient credit, and poor international terms of trade. Kenya's booming economy weakened in the 1980s as a consequence of a rising trade deficit, among other factors. Kenya's slowing economic growth rate and expanding budget deficits caused the government to turn to structural adjustment policies advocated by the International Bank for Reconstruction and Development (World Bank) and the International Monetary Fund (IMF) as part of their economic assistance to Kenya.

Moi consented to internal and external pressure for economic and political liberalization in late 1991. Despite experiencing a marked political transition in the introduction of multi-party politics in 1992, Kenya had its worst economic performance between 1991 and 1993. Growth in GDP stagnated, and agricultural production shrank at an annual rate of 3.9% in comparison to the upsurge witnessed in the prior decade. Inflation reached a record 100% in August 1993, and the government's budget deficit was over 10% of GDP (KNBS, 2009). As a result of these combined problems, bilateral and multilateral donors suspended programme aid to Kenya in 1991. In 1993, the Kenyan government began a major programme of economic reform and liberalization. A new Minister of Finance and a new Governor of the Central Bank of Kenya undertook a series of economic measures with the assistance of the World Bank and the IMF. As part of this programme, the government eliminated price controls and import licensing, removed foreign exchange controls, privatised a range of publicly owned companies, reduced the

number of civil servants, and introduced conservative fiscal and monetary policies. From 1994 to 1996, Kenya's real GDP growth rate averaged just over 4% a year (East Africa, 2002). In 1997, however, the economy entered a period of slowing or stagnant growth, due in part to adverse weather conditions and reduced economic activity prior to general elections in December 1997. The ethnically fractured opposition failed to dislodge KANU from power in elections in 1992 and 1997, which were marred by violence and fraud, but were viewed as having generally reflected the will of the Kenyan people.

In 2000, GDP growth was negative, but improved slightly in 2001 as weather conditions became favourable for increased agricultural production. Economic growth continued to improve slightly in 2002 and reached 1.8% in 2003 (Odundo, 2008). Yet another significant political transition in Kenyan history was marked in 2003 when President Moi stepped down in December 2002 following fair and peaceful elections and handed over his succession to Mwai Kibaki, running as the candidate of the multiethnic, united opposition group, the National Rainbow Coalition (NARC) following a campaign centered on an anticorruption platform. This transition was followed by an upshot in economic growth which increased at an accelerating rate to 4.3% in 2004 and thereafter, 5.8% in 2005 (Campbell, 2006). Incidentally, Kibaki's NARC coalition splintered in 2005 over a constitutional review process and government defectors joined with KANU (previous ruling party) to form a new opposition coalition, the Orange Democratic Movement (ODM), which defeated the government's draft constitution in a popular referendum in November 2005 (Freeman, 2009: 19). Kibaki's re-election in December 2007 brought charges of vote rigging and serious irregularities against his Party of National Unity (PNU) from opposition chief candidate Raila Odinga and independent observers. The results sparked two months of political and ethnic violence in which as many as one thousand five hundred people died and countless others were displaced. Peace talks sponsored by the United Nations in late February produced a power sharing accord bringing Odinga into the government in the restored position of Prime Minister.

The magnitude of Kenya's post-electoral violence suggests the elections merely triggered a situation that was already volatile. The 2007 election fiasco has exposed the deliberate encouragement of ethnic tension by power-hungry elites, feeble democratic traditions and institutions in Kenya, one that threatens to consume it if not adequately addressed. Furthermore, it can be noted that persistent government underperformance, widespread corruption, high unemployment and decades of deep ethno-political division led to the resentment that found its target in a disputed election result.

In spite of the unprecedented turn of events, it is evident that the economic outlook in Kenya has been positive during the past decade. The change in political regime in 2003 which transpired when incumbent President Mwai Kibaki took office was aimed towards consolidating democracy in Kenya and implementing appropriate redistributive reforms and policies. The macroeconomic policies implemented were strongly pro-economic growth and geared towards boosting economic development, yet implemented with normative trade-offs such as greater inequality that is currently prevalent in Kenya. To elaborate, economic development itself generates a number of strains on societies that lie at the very roots of conflict. At least initially, economic growth tends to increase inequalities within a country, as some communities or individuals benefit from rising income and are left behind. This economic theory is evidenced in the Kenyan context where growth increased by over 6% since 2000 and yet this was accompanied by ever-widening gaps in income distribution. This corroborates Kuznets (1955) view who maintains while economic growth raises the incomes of the skilled individuals relative to the unskilled; it provides an impetus for greater income disparities. As individuals feel marginalized and less privileged, polarization between the haves and the have-nots persists which inevitably breeds conflict.

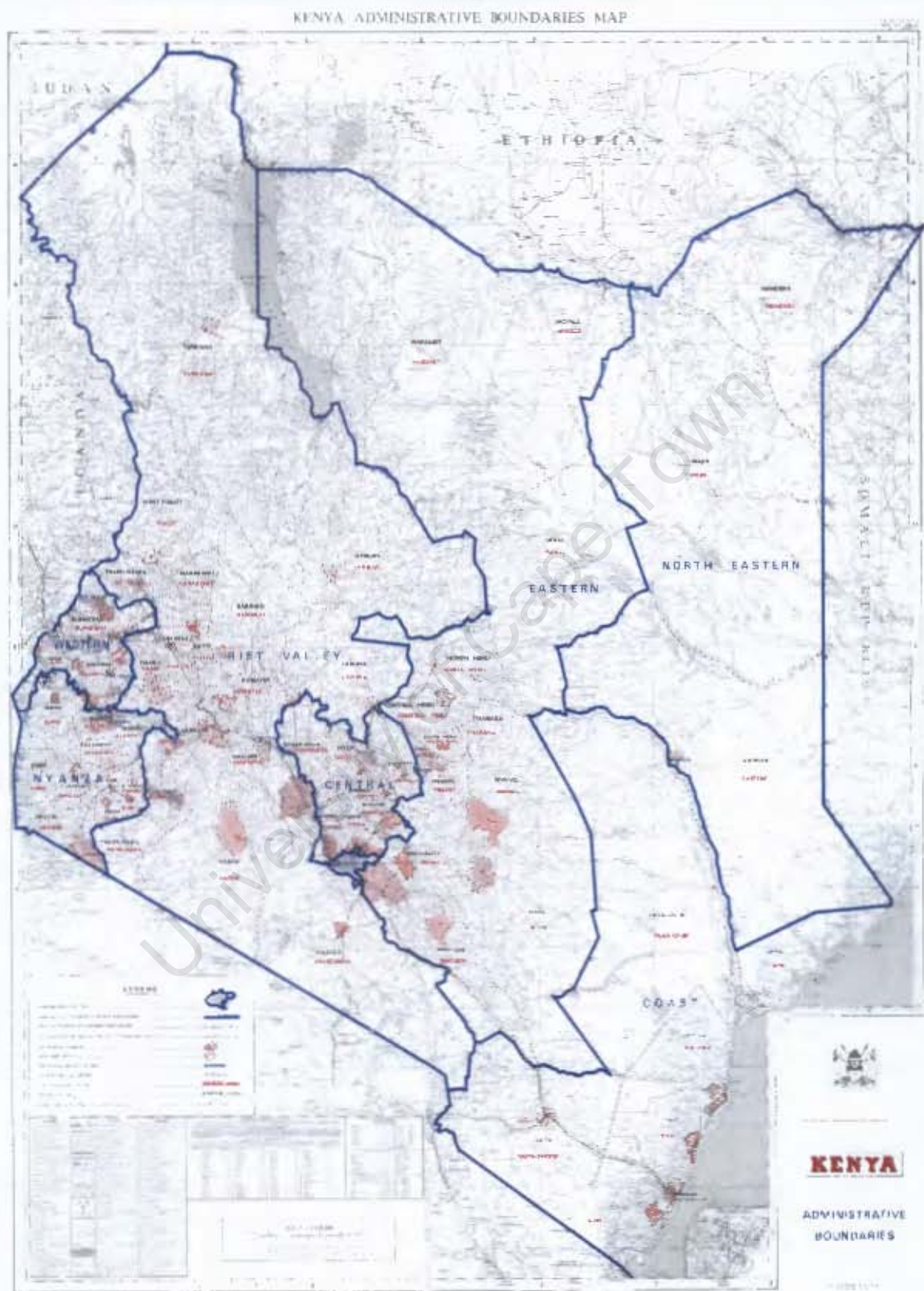
The Kenyan government has set the ambitious target of achieving the status of industrialized economy by 2030. The Kenyan government and policy makers have a tremendous task of implementing appropriate reforms and policies to correct its historical setbacks. The main challenges include taking candid action on corruption, enacting anti-terrorism and money laundering laws, bridging budget deficits, rehabilitating and building infrastructure. It is hoped that by addressing these challenges, this will help maintain sound macroeconomic policies, and speed up the rapidly accelerating economic growth, which had been projected to grow to 7.2% in 2007 compared well to an actual economic growth rate of 7.1% (Ondari, 2009). In 2007, the Kenyan government unveiled Vision 2030, which is a very ambitious economic blueprint and which, if implemented in its entirety, has the potential of putting the country in the same league as the Asian economic giants. However, in order to attain this 'industrialized nation' status by 2030, it is important to trace the impediments to economic development which act as limiting factors for enhanced economic activity and future development. Ultimately, conflict retards economic development which would suppress the efforts of policymakers in Kenya in achieving Vision 2030.

The argument presented by this study is that conflict in Kenya is fuelled by grievances related to economic inequality. This inequality is revealed on a regional level which sheds light on the contribution of regional attributes to the probability of conflict. Although the patterns of conflict

are complex and difficult to measure, it has been documented that both public and private investment of national resources have benefited the Kikuyu and Central region at the expense of other deprived groups. Furthermore, economic inequalities in Kenya have continually been politically exploited where it is believed that the government posts are viewed as avenues for private economic gain and political participation at the expense of maximizing the social welfare of Kenyans. As a result, the 2007 election was viewed as an opportunity to garner a new era of political leadership that would implement robust economic reforms and correct past imbalances. Seemingly, the disturbance in the democratic process observed by vote-rigging and irregularities frustrated the efforts of marginalised groups resulting in a violent polarised response.

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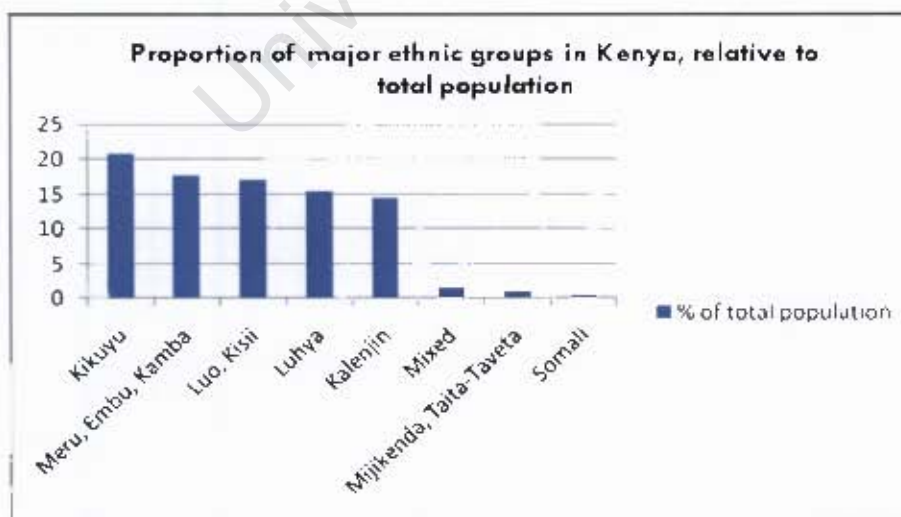
Figure 1: Map of Kenya



3.2 Tribalism and Ethnic Divides

Kenya is a highly heterogeneous country with well over 40 sub tribes which originate from the eight main provinces of Kenya namely: Central, Coast, Eastern, Nairobi, North Eastern, Nyanza, Rift Valley and Western provinces (figure 1 displays the geographic location of all eight provinces where the major ethnic groups live). There are eight main tribes that mainly reside and thus culturally belong to these regions with the exception of Nairobi which accommodates a blend of varying and mixed ethnicities. The Kikuyu tribe mainly reside in the fertile highlands of the Central province and are the largest ethnic group. Historically, the Kikuyu tribe have dominated the country both economically and politically. The second largest of the tribes residing in the same province are the Meru, Embu and Kamba. Collectively, these three tribes live in the Eastern province of Kenya surrounding Mount Kenya. The third largest of the tribes jointly living in the same province are the Luo and Kisii who culturally belong to one of the smaller provinces – Nyanza province, located along the West of Kenya. Interestingly, the Kalenjin majority who are only about fourteen percent of the entire population reside in the largest province in Kenya (the Great Rift Valley province). The Mijikenda and Taita-Taveta ethnic group live in the Coastal region and are known for their trading practices with Arab and Persian traders since the 19th century. The Somali tribe consist of semi-nomadic camel herders who mainly inhabit the dry regions of the North Eastern province. Figure 2 provides an illustration of the population share of each ethnic group in Kenya based on the 1999 Census Statistics.

Figure 2: Dispersion of major ethnic groups in Kenya, as a proportion of total population



Source: Author 2009, using Population and Housing Census Data 1999

In this study, special attention has been drawn to three ethnic groups namely the Kikuyu, Kalenjin and Luo. This is because any ethnic and political conflict that has emerged in Kenya over the past few decades has predominantly affected or concerned these three groups. To elaborate further, the wave of post-election violence that broke out in 2008 was demonstrated starkly by ethnic killings targeted at supporters in PNU and ODM strongholds. These supporters were mainly the local Kikuyu, Kalenjin as well as Luo ethnic groups respectively. It has been reported that organised attacks in the Rift Valley region belonging to the Kalenjin majority erupted against the Kikuyus amongst other PNU supporters. There is evidence that attacks were orchestrated by local leaders who exploited deep-seated ethnic resentment over Kikuyu settlement since independence. Other retaliatory attacks by gangs of Kikuyu youth were aimed at Luo, Luhya, Kalenjin and other groups perceived to be associated with ODM, allegedly these youth received payment to perform these attacks (IRIN, 2009). While national level political competition in Kenya is often misunderstood and shallowly interpreted in terms of a competition between the Kikuyu and the Luo, most commentators on Kenya's politics do ignore the position and role of the Kalenjin, Luhya, Kamba, Kisii, Coastal peoples (Mijikenda), Swahili, Arabs, Indians and Europeans who live in large farms/ranches and important urban areas in Kenya. Each of these groups subsumes a number of smaller ethnic units that become relevant bases of social identity in more localized settings. What is however neglected in the debate about Kenyan stability is the reality that all ethnic groups have a stake in the running of the Kenyan government, but due to systematic exclusion of some groups from the national leadership, competitive politics in Kenya is bound to have an ethnic dimension.

Nepotism along ethnic lines has been viewed as one of the greatest obstacles to Kenyan development. It is widely believed that the presidency and other government posts are avenues to enhancing economic gain for an individual and that individual's tribe. During Kenyatta's presidency, there existed a great sense of alienation of other groups in Kenya from the political and economic order for his entire reign which ran from 1963 to 1978. Although Kenyatta (who belonged to the Kikuyu tribe) did not instigate ethnic clashes, he targeted eminent persons from ethnic groups that he felt were a threat to his leadership. While the first cabinet was quite representative of the face of Kenya, soon ideological and socio-economic differences cropped in, thus dividing the original personalities in the independence struggle. Further, the Mau Mau veterans of the Central region were sidelined and politics of exclusion and elimination begun with intensity, sometimes combined with assassinations. Electoral politics never took shape in a

democratic sense since Kenyatta who ruled mainly through the provincial administration, outside the KANU framework, rendered the party system that could have rallied the people around issues and programmes meaningless.

When incumbent President Kibaki took office in 2002, many Kenyans were optimistic about change in casting aside tribalism and building the nation towards higher levels of development and better redistribution of national resources. However, it has been alleged that Kibaki's coming to power became an opportunity for his closest allies and supporters to regain what they had lost under the authoritarian regime of Moi, belonging to the Kalenjin tribe. As a result, civil servants from strongholds of the Orange Democratic Movement were retrenched to create vacancies for Kibaki's closest allies and supporters mainly derived from the same ethnic group. The struggles to consolidate democracy and 'build a democratic African socialist state' as pledged by Kenyatta, begun immediately after the postcolonial government were formed. However, fears of ethnic ascendancies coupled with power-hungry ethnic political elites and undemocratic transitions are all hallmarks of today's Kenya and highlight the undemocratic historical trajectory that Kenya has been moving along. Thus, cohesion in Kenya rests on the existing coalition government's ability to deal with all economic grievances and hinges on its willingness to work as a single unit, the willingness of ruling and opposition party to promote reconciliation between tribes, coupled with addressing the distributive balance of Kenya's national resources.

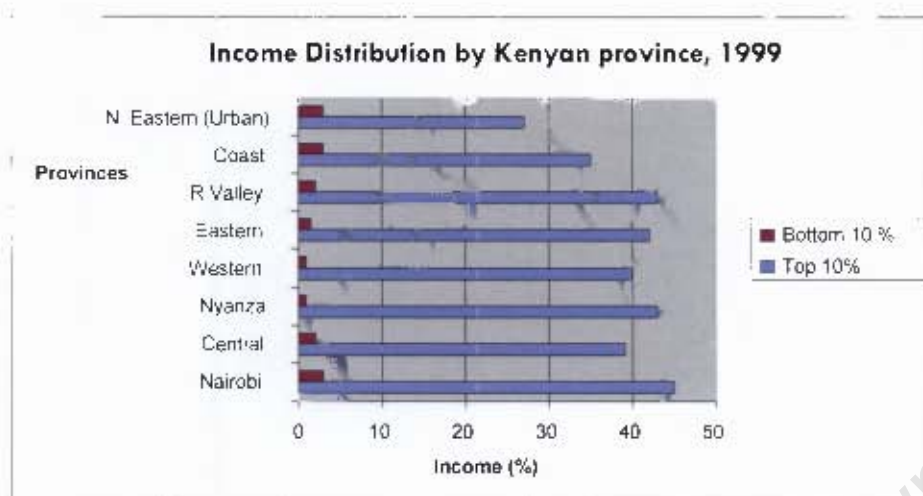
It was in recognition of ethnic fragmentation that the Government committed to establishing a framework for managing interethnic relations in the country. This brought about the establishment of the department of National Cohesion in the Ministry of Justice and Constitutional Affairs by the parliament enacting the National Cohesion and Integration Act of 2008. However, since then the government has done little to avert future occurrence of the afore-mentioned owing to divisions characterized by politicians from the ruling party (PNU) and opposition party (ODM) taking hard-line position on pecking orders and level importance in the government. It is for this reason that it is not clear what concrete steps the Government is taking to assist Kenyans towards integration and cohering; and the country is as ethnically polarized as it has ever been. Incidentally, ODM had promised a new constitutional order, devolution and an equitable distribution of resources to an electorate frustrated by a lack of progress in promised reforms under Kibaki which resulted in a highly ethnically polarised election.

The Waki commission established to look at the post-election violence traces some of the causes of the unprecedented political polarization that resulted in violence to the retired president, Mr Daniel Arap Moi's era, stating that his failure to implement findings of the Akiwumi commission into ethnic clashes that rocked parts of the country during the 1992 and 1997 elections contributed to the latest chaos. Disparity in resource allocation, lack of leadership, poverty and abrogation of responsibility by professionals are just some of the reasons for severe polarization that the commission highlighted. Other scholars such as Roberts (2008) attribute instability developing through colonial spheres of influence and ethnic stratification as resulting from political polarization with ethnic overtones and the reality of people being manipulated by politicians. One of the Acts formulated by the 10th parliament to litigate political violence imminent in the 2007 election was the Political Parties Act of 2007. The aim of the act, according to the Waki commission, was to ensure interethnic harmony. However, in the current cacophony of coalition politics, that statute has not been implemented as yet. Although the country is at present relatively calm, there is still ethnic tension in the form of power struggles because of the division in the government.

3.3 Graphical Analysis

In this section, we depict a series of graphical illustrations of the socio-economic state of Kenya and its eight provinces. In looking at the intricate trends over time for some factors, we are able to trace out the patterns of sharp socio-economic inequalities on both a national and regional level in explaining the probability of conflict in Kenya. This aims to highlight the urgency for reforms to correct historical setbacks towards a more equitable allocation of resources.

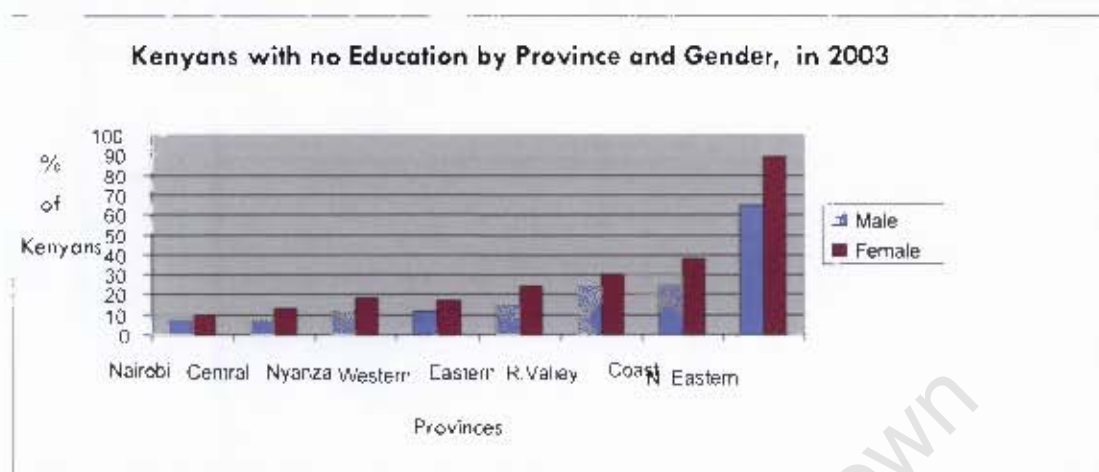
Figure 3: Income distribution by Kenyan province, in 1999



Source: SID 2004

Figure 3 shows us the income disparities between the eight different regions. The top 10% of residents living in all the regions earn a significant proportion of total income relative to the bottom 10% of income earners. In the literature, a reliable measure of economic inequality is the ratio of the richest 10% relative to the poorest 10% (Thorbecke and Charumulind, 2002: 1479). From Figure 3, we observe that Nairobi, Nyanza, Rift-Valley and the Eastern provinces have the largest income disparities between the richest and poorest 10% of individuals living in each respective province. In other words, the top 10% of residents in Nairobi, Nyanza, Rift-Valley and the Eastern provinces earn more than 40% of total income. On the other hand, the bottom 10% of residents in these four regions earn less than a fifth of total income. Given this stark income gap between the top 10% and bottom 10%, we observe that only a small proportion of individuals earn far less than 10% of the total income. Based on this measure, we see that the ratio of the richest 10% relative to the poorest 10% is rather large. To a large extent, this finding justifies the considerable economic inequality witnessed in these particular regions.

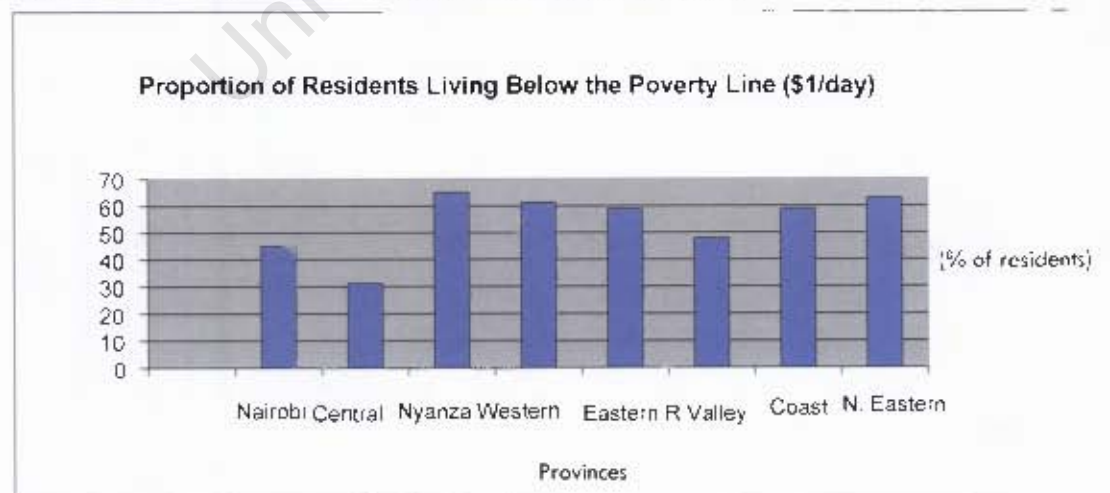
Figure 4: Proportion of Kenyans without any formal education



Source: Demographic Health Survey (DHS) Data, 2003

Based on figure 4, we see that a small proportion of individuals from Nairobi and Central provinces have no education relative to the other provinces which reveals the divergent horizontal inequalities in education on a regional level. It is worth noting that there is an increasingly stark difference between males and females in each province as evident in the chart, where males are statistically more educated than females. The North Eastern province displays the most astonishing findings where more than 60% of individuals, both male and female, have not attained any formal type of education.

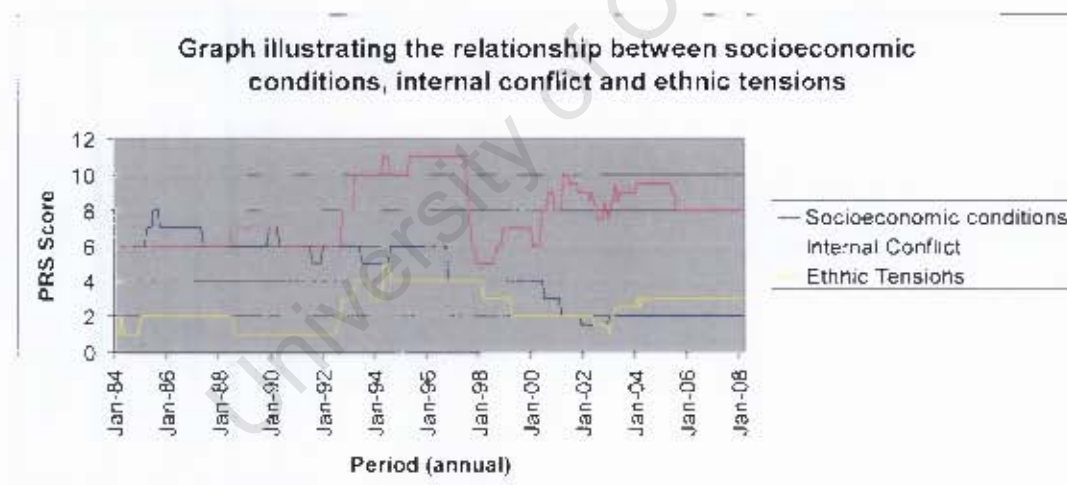
Figure 5: Poverty incidence across all provinces in Kenya, 2004



Source: Author, 2009 using data from Kenya HDR 2004

According to a report by the Central Bureau of Statistics (2006) in Kenya, the richest constituencies are in Central province, while the poorest ones are to be found in Nyanza province, which has poverty levels of approximately 65 per cent. This finding is also reflected on figure 5. Nationally, 14.4 million Kenyans or about 60 per cent of the population live below the poverty line. The semi-arid and arid North-Eastern province with poverty levels of 64 per cent, has been neglected by successive governments since the historic Shifta war of the 1960s, in which area residents wanted to secede to either become an independent state or join Somalia. Okwi et. al (2004) highlights that the differences in poverty levels are caused by a multitude of factors which range from climatic conditions (such as rainfall or soil fertility) coupled with the presence or absence of natural resources in some regions relative to others, access to infrastructure or public goods/services as well as political and historical attributes. All in all, geography and infrastructure account for more than half of the variability seen in poverty rates across provinces in Kenya.

Figure 6: Graph illustrating the relationship between socioeconomic conditions, internal conflict & ethnic tensions



Source: Author derived graphs using PRS time-series data, 2009.

Figure 6 provides a visual outlook of the patterns evident in the data throughout a multitude of economic, social and political changes in Kenya from 1984 to date. Overall, we observe that internal conflict and ethnic tensions move together with a few exceptions. Thus generally, when ethnic tensions escalate, internal conflict is seen to increase simultaneously. The analysis of the association between internal conflict and socioeconomic conditions is slightly less obvious and more complex. The definitions of internal conflict, ethnic tensions and socio-economic conditions

are applied here as defined by the International Country Risk Guide (ICRG) rating system. The ICRG rating system is based on a set of 22 components grouped into three major categories of risk: political, financial, and economic as developed by the Political Risk Service (PRS) Group for any given risk assessment. The PRS Group rating utilises a scale of 0-12 for both internal conflict and socio-economic conditions. The ethnic conflict component is assessed using a scale of 0-6 (The PRS Group, 2009.)

Given the variability in welfare levels on a provincial level (evidenced by graphical illustrations in figure 3, 4 and 5), the national-level statistics alone depict that the socioeconomic conditions have been declining rapidly in Kenya over time. Looking at figure 5, we can see that the introduction of multi-party elections in 1992 was followed by an increase in the state of socio-economic conditions. This could be explained by the fact that in an attempt to consolidate democracy, improved distributive reforms had been implemented and the outcome of the structural adjustment programs from the early 1990s was positively affecting the state of the economy. However, the re-election of autocratic Moi led to a gradual decline in 1997 as evidenced in the graph. Central to this analysis, a marked transition was the appointment of Mwai Kibaki as the third president of Kenya, which saw an increase in the state of socio-economic conditions which remained consistent until the next presidential elections at the end of 2007. Invariably, this sharp rise in the country's socio-economic conditions during this political transition in 2003 occurred following Kibaki's pro-economic growth policy implementation.

Figure 6 also shows that since the introduction of multi party politics in December 1992, ethnic tensions remained relatively steady at 3 until the first quarter of 1993 then rose till 4 by the 3rd quarter before dropping back to 3 by year end and then sharply increasing to 5 in mid 1994 followed again by another drop to 4 by the end of 1994 where it remained steady throughout the cycle of the 1992 election for three years. Thereafter tension declined gradually to 1 up until the change in the political regime type from Moi to Kibaki. We observe a stark burst in tension at the onset of Kibaki's term to a level of 2.5 in mid 2003 which continues rising to 3 until the end of that election cycle to the most recent elections of 2007. Here we are interested in seeing whether this increase in tension at the beginning of 2003 is matched by any changes in internal conflict.

Kimenyi (1997) explains that the introduction of multiparty politics to Kenya in 1992 led ruling and opposition parties to quickly splinter according to ethnic groupings. Muigai (1995) agrees that, the first multiparty election held in 1992 rotated around ethnic alignments, and resulted in

a pattern repeated in the 1997 general elections. The 1992 multiparty elections was greatly marred by violence which left two thousand people dead (Moitui and Islam, 2008) and led to a systematic bias towards ethnic alliances. Nevertheless, Oyugi (1997) Orvis (2001) and Apollos (2001) hold the view that voting in Kenya is simply a cultural phenomenon which was weakened in the 2002 general election when a broad coalition of ethnic groups supported Mwai Kibaki.

The trends in internal conflict have oscillated over time. Looking at figure 6, we can see that the introduction of multi-party elections in 1992 was followed by an increase in internal conflict. The re-election of autocratic Arap Moi led to a gradual decline in 1997. However, when current president Kibaki was elected in 2002, we observe a sharp increase in the internal conflict between January 2003 to April 2003 from 7.5 to 9.5 and then a slight decline in July 2003 where it remained at a steady high until May 2005 where it fell and remained at around 8 until 2008. Furthermore, the formation of the first coalition government in 2001 led to a resurgence in ethnic and political violence which may further explain this graphical outcome in conflict from about 2001 to 2003. Intuitively, we are interested in exploring the factors that caused this upshot in internal conflict in Kenya and the possible associations to the sharp effect on ethnic tensions albeit an increase in socio-economic conditions in Kenya, *ceteris paribus*.

Overall, it is evident that conflict has been prevailing over the past decade at different political landmarks. The introduction of multi-party politics in 1992 led political parties to splinter along ethnic lines and a significant death toll owing to violence. Following the change in regimes from authoritarian Moi towards democracy imposed under Kibaki's rule, there was a resurgence in ethnic and political violence. Another episode of political change in government in 2007 led to instability across political, economic and social spheres, notwithstanding the scale of the most recent crisis that involved staging violent protests and further escalating into outright blood-shed. In part due to the ethnic and geographic diversity of the opposition parties involved, no one narrative can explain the reaction of opposition supporters that causes such violent rampage. Nevertheless, this analysis seeks to understand the role played by structural attributes in the presence of economic inequalities on the probability of conflict.

CHAPTER FOUR: METHODOLOGY

4.1 Introduction

The theoretical literature reviewed the implications of income inequality as a form of economic inequality on the probability of conflict. Specifically, the theory highlights the effect of economic growth in exacerbating greater inequalities and the resultant propensity towards fragmenting into class divisions or dividing along ethnic lines. Ethno-linguistic fractionalization has been a historical issue in Kenya whose intensity has persisted over the past decade. Such fragmentation in a cross-section sample across regions affects resource distribution, income, growth and economic policies. The methodological framework used encompasses a cross-sectional dataset which provides these socio-economic factors and applies this dataset to highlight the structural conditions that cause conflict in Kenya. In order to give proper scope to the tentative nature of conflict and the causal link between violence breaking out and persistence of economic inequality, an ordinal index of polarization utilizing key indicators within the data set used is developed. We also develop a conflict index using the principal component analysis. Each explanatory variable is selected on the basis of its relatedness to conflict or tension in Kenya, backed by various sources of literature.

In view of the stated objectives of this research, this section seeks to provide a methodological framework to analyse the association between the probability of conflict and economic inequality coupled with ethnic fragmentation, holding other variables constant that may affect the association. The dataset utilized was extracted from two existing cross-sectional surveys namely the 2003 Afrobarometer survey and the 1999 Kenya Population and Housing census. We take a snapshot analysis of 2003 owing to the fact that, the end of 2002 marked a significant change in the political regime through Kenya's first electoral transfer of power towards the realization of a full democracy.

4.2 Data Collection and Analysis

The study draws mainly on secondary sources to derive relevant models used to explain the interaction between conflict and economic inequality, in the face of ethnic diversity in Kenya. Secondary data was extracted from the Afrobarometer survey which was conducted in 2003 as a nationally representative sample survey. A random sample of 2398 individuals of the adult

Kenyan population was utilized in this 2003 survey. The sampling technique which follows a random, stratified, multi-stage area probability method was implemented using a sampling frame from the Kenya Central Bureau of Statistics (CBS) 1999 Population and Housing Census. Further, enumeration areas (EA's) were stratified according to administrative province and type of location (urban versus rural). The Afrobarometer findings are a valuable tool for assessing the social, economic and political atmosphere in Kenya. In creating a dataset for this study all respondents that took part in the survey were considered as the population base. Relevant variables from the survey questionnaire were selected and others appended into the dataset. The methodological framework assumes intra group homogeneity where the unit of analysis is regions, specifically eight provinces. These provinces namely are Central, Coast, Eastern, Nairobi, Nyanza, North-Eastern, Rift-Valley and Western. The table below illustrates the sampling weight adjusted proportions of respondents from each region.

Table 1: Composition of Representative Sample Used In the Study, By Region.

Region	Proportion of respondents from representative sample (approximate %)
Rift Valley	24.3
Eastern	16.3
Nyanza	15.4
Central	13.1
Western	11.9
Coast	8.7
Nairobi	7.4
North Eastern	2.9

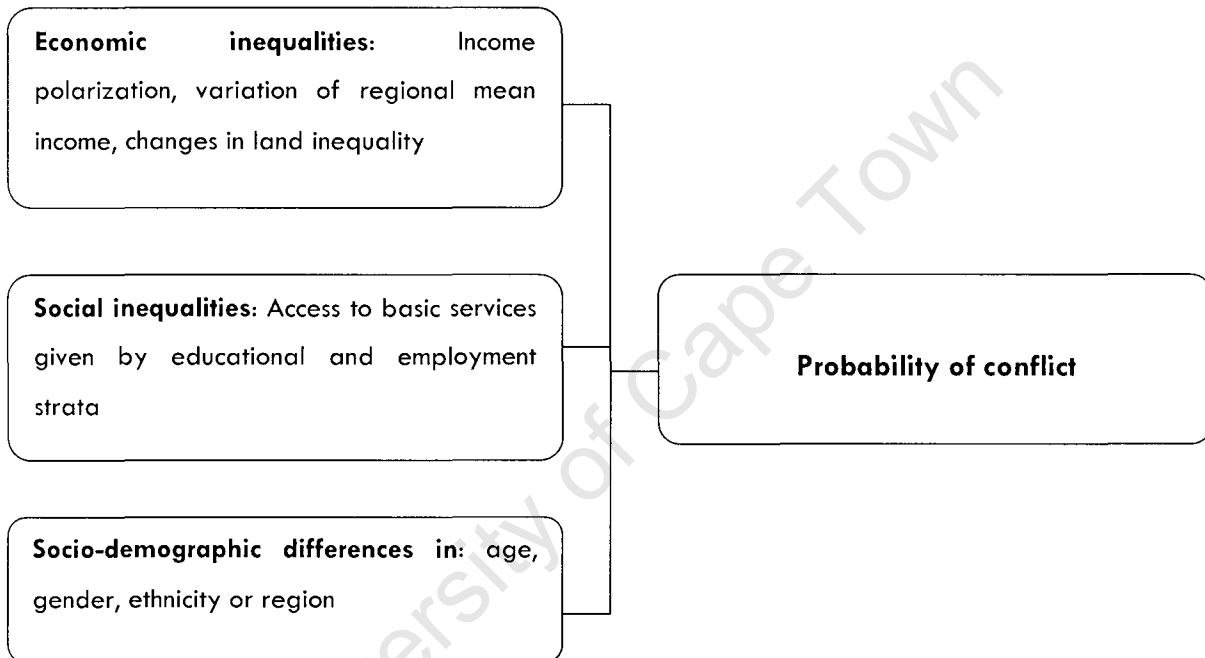
Source: Author using Stata, 2009

The data analysis method will be both descriptive and inferential statistics. On the quantitative data extracted, STATA will be used to analyze the data. Descriptive statistics such as means, percentages, standard deviation and frequency distribution will be used to enable the researcher to meaningfully describe the distribution of measurements. While on the qualitative data obtained from open ended-questions, an in-depth content analysis will be used to analyze the data and the result presented in prose form. Further, logistic regression modelling techniques will be employed to produce results for interpretation and policy recommendation. The dependent variables and explanatory variables used are elaborated upon in section 4.3.

4.3 Variable selection and definition

In this study, the dependent variable is the conflict index while the independent variables are the grouped as follows: economic inequalities, socio-demographic factors, social inequalities. Thereafter, we will observe the relationship between these explanatory factors and the conflict index to determine the probability of conflict occurring on a national level and regional level.

Figure 7: The conceptual framework



Source: Author, 2009

Conflict Index

Incidentally, there are conflicts in all societies but the transformation to violent conflict occurs only when there are conditions and processes that facilitate it and where no effective action is taken to reverse the process. These conditions are mostly structural in nature and the process by which they escalate towards violence are variables that can be monitored by appropriate indicators. Conflict-specific indicators are based on information and data that are not easily measured and are more qualitative than quantitative in nature. Generally, in the process of analysing variables of a qualitative nature, it is imperative to account for any interrelated variables which may be generated by some unobserved components. To this end, we shall employ the principal components analysis (PCA) so as to retain the variation of each variable considered to construct the conflict index. Using the PCA method enables us to extract and estimate common factors in

the data set pertaining to the probability of conflict, as well as reduce the dimensionality of the data set itself. In the data set, we obtain a large number of variables (variables here refer to questionnaire items) which may be correlated to each other i.e. measuring the same construct. The principal component approach is essentially a variable reduction procedure which allows one to reduce a set of observed variables into a smaller set of artificial variables, known as principal components which have maximum variance and are uncorrelated. The PCA approach will be explained further in the following paragraphs.

According to Ebata (2001) a conflict indicator should identify patterns of change amongst individuals. In other words, a conflict indicator should give an indication of changes in attitudes and values towards violence. Thus, in accordance to the criteria explained by Ebata (2001) and based on the PCA procedure, we shall derive the respondents answers to these questions as the basis for constructing our dependent variable. Moreover, these responses will provide a reliable indication of respondents' propensity to transform conflict to violent conflict. Ebata (2001) expresses further the conditions for a conflict-indicator and considers "the institutions, mechanisms, procedures and values that manage cooperation and accommodation, competition and conflict in all societies, which enable the transformation from conflict to violent conflict". In other words, the variable also aims to consider the extent to which respondents are likely to use violence as a mechanism for cooperation in the event of rising tension and this highlights the deficiency of ordered institutions for resolving conflict. Ultimately, such mechanisms widen regional cleavages and spiral out of control into an imminent outbreak of violent conflict.

The Afrobarometer survey utilised provides a reliable source of qualitative data for the indicators of the probability of conflict. The dataset provides, among other indicators of conflict, the triggering mechanisms of conflict in Kenya. Seven variables¹ linked to the nature and use of violence in conflictual situations, are available in the dataset which are of particular importance in constructing the conflict index. The 2003 Afrobarometer survey captures a number of economic, political and social phenomena in Kenya and also reveals the causes of violence that affects its citizens. Specifically, the survey includes a multitude of questions of relative importance in understanding the association between conflict, economic inequality and ethnic diversity. It encompasses questions to gauge the likelihood of the use of violence or force for a political cause, or rather join others to raise an issue. Additionally, the survey also includes questions that highlight the respondents' views of the role of the government in resolving conflict and the proportion of problems they regard as solvable by such institutions. The data set used

¹ These variables are stated in the appendix part (i).

highlights an individual's previous involvement in a demonstration or protest march as a solution for conflict and the extent to which violent conflict exist between groups in the country. Other views such as the influence of multiparty competition on conflict are raised by the questionnaire as well as the key causes of conflict in Kenya as observed by the representative sample.

Notably, the Afrobarometer survey contains a wealth of information that reveals the perceptions of Kenyans in view of the odds of conflict occurring, who is responsible and what is causing the conflict in Kenya. The PCA approach is extremely functional in this study where we obtain data on seven key variables and consider that these variables are actually correlated to each other. A quick look at the correlation matrix² actually indicates that these variables are not completely orthogonal (uncorrelated). Therefore, in order to account for most of the expected variance in the observed variables and eliminate redundancy in these variables, we reduce the number of variables into principal components using the PCA. In other words, out of the seven variables considered, we shall only select those that are most relevant to constructing the conflict index using the PCA. The determining factor as to which variables will be used to construct the conflict index will depend on the weighting attached to each variable and its magnitude of variance.

By definition, principal component refers to a linear combination of optimally-weighted observed variables (Kim, 1978a). By applying the PCA procedure using STATA, we find that there are unique factors present in only three key variables out of the seven variables considered which we shall use jointly to construct the conflict variable. In principal, these three variables (questions) provide a great deal of weight in constructing the 'likelihood of conflict' index as these variables have relatively high factor loadings on this component. Factor loadings refer to the sizes of coefficients for any given principle component, thus high factor loadings means the chosen variables carry the greatest magnitude and also have unique variances. These three questions are worded as follows in the questionnaire (Afrobarometer 2003 Survey Questionnaire) and refer to Q25e, Q25e and Q76 respectively as denoted in the principal component analysis tables in the appendix (iii).

1. *Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance: Used force or violence for a political cause?*

² See Appendix for correlation matrix of variables utilised to determine the conflict index.

2. Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance: Attended a demonstration or protest march?

3. Please tell me which of the following statements is closest to your view. Choose Statement A or Statement B.

A: The use of violence is never justified in Kenyan politics.

B: In this country, it is sometimes necessary to use violence in support of a just cause.

The conflict index used in this analysis is constructed from the responses to these questions as a result of high factor loadings on one component. More specifically, we draw on the responses from the questions indicated above using the principal component analysis approach. For example, the responses available to the first two questions each have seven separate response options are given below:

- i) No, would never do this,
- ii) No, but would do if had the chance
- iii) Yes, once or twice,
- iv) Yes, several time
- v) Yes, often,
- vi) Don't Know
- vii) Refused to Answer.

The responses for the third question are:

- i) Agree Very Strongly with A,
- ii) Agree with A,
- iii) Agree with B,
- iv) Agree Very Strongly with B,
- v) Agree with Neither,
- vi) Don't Know,
- vii) Refused to Answer.

For the purposes of this study, we are interested in knowing the scale or extent to which respondents are likely to engage in the activity or not as our proxy for the conflict variable. In other words, in light of these seven separate response options, what is of relative importance to the study is the responsiveness of taking part in these activities which takes a binary value 0 for 'low' and 1 for 'high' irrespective of the number of times an individual will engage in the stated activity. A total of 99% answered the questions using responses 1-5 which leaves a relatively insignificant margin of error from dropping responses 6 and 7 in using our binary specification.

The use of discrete models to represent conflict by a binary variable is hereby functional, and once we identify the conflict categories, we can use discrete choice models such as probit or logit to estimate the probability of conflict. Therefore, we shall account for the variance in the observed variables using responses 1-5 in forming the dichotomous variable-probability of conflict, such that if the response is 1 or 2 it falls under the binary value 0 for 'low conflict' and if the response is 3, 4 or 5 it falls under the binary value 1 for 'high conflict'. Moreover, a common factor in these three questions is that they all highlight to a greater extent whether or not an individual will engage in conflict.

Polarization Index

Kenya is a highly heterogeneous country with over three dozen ethnic groups distributed across its eight provinces. Provincial regions are represented in the sample in proportion to their share of the national population. However, a sample weight (adjusted within country weight) is included as a variable in the data set to account for any sampling bias, for example by oversampling in the North Eastern province to counter the bias. This is evident in table1 under section 3.1.

Based on a formulation by Esteban and Ray (ER) in 1999, the polarization index is intended to 'capture the sum of interpersonal antagonisms'. In other words, this index aims to capture the interplay between the sense of group identification (group size) and sense of alienation with respect to other groups or intergroup distance. It can be noted that although we expect that correlations exist between income and varying region, it is not equally clear which levels of income distinguish different groups with common identity, that is, which income levels distinguish along ethnic lines. According to an extension on the ER formulation by Collier (2001), a cruder specification entails looking at group dominance and factoring this into the index where societies qualify as dominated if the largest cohort from a specified region contains between 45% and 90% of the population. However, this extension does not necessarily apply to the representative sample as the largest regional sample, Rift Valley contains only 24% of the population (weight-adjusted).

Reynal-Querol (RQ) and Montalvo (2002) derive a more robust index than the index of fractionalization and the index of income/wealth polarization formulated by Esteban and Ray (1994). These authors postulate that although polarization is a concept that is related to

inequality it should also provide more explanatory power for the occurrence of conflicts. This stems from the fact that there are significant problems concerning tribal/ethnic conflict which have more to do with clustering attributes than inequality of distribution. Therefore, we shall apply the main assumptions and axioms of the RQ index of polarization which is represented as:

$$P(\alpha, K) = K \sum_{i=1}^N \sum_{j=1}^N \prod_{i=1}^{(1-\alpha)} \prod_{j=1}^{(1-\alpha)} |y_i - y_j|$$

where,

- α refers to the degree of polarization sensitivity in each group i
- k is a constant

This equation facilitates a dual purpose: It jointly defines:

- the Gini index where $|y_i - y_j|$ represents the Euclidean income distance between any two groups i and j , and y_i, y_j is the income level of group i and j respectively.
- Π_i is the proportion of income obtained with respect to the total sample population.

The only exception to the conventional Gini index is the exponential power $(1+\alpha)$ which makes the RQ index more robust and distinguishes it as a polarization index from inequality measures. However, if we want to empirically capture the ethnicity distance, this may be extremely difficult and Reynal-Querol (2002) postulates that it is less controversial and simplistic to capture identity of groups. Following Reynal-Querol (2002), we consider a dichotomous view where an individual belongs to a group or does not belong to a group. Thus, according to the RQ formulation, the distance between ethnic groups is generated by a discrete metric δ : of which δ is either 0 or 1. Based on the literature, we substitute the Euclidean income distance $|y_i - y_j| = 0$ if $i=j$ and $|y_i - y_j| = 1$ if $i \neq j$ and the original polarization formulation is altered to an index of discrete polarization DP which is formulated as:

$$DP(\alpha, K) = K \sum_{i=1}^N \sum_{j=1}^N \prod_{i=1}^{(1-\alpha)} \prod_{j=1}^{(1-\alpha)} \delta_{ij}$$

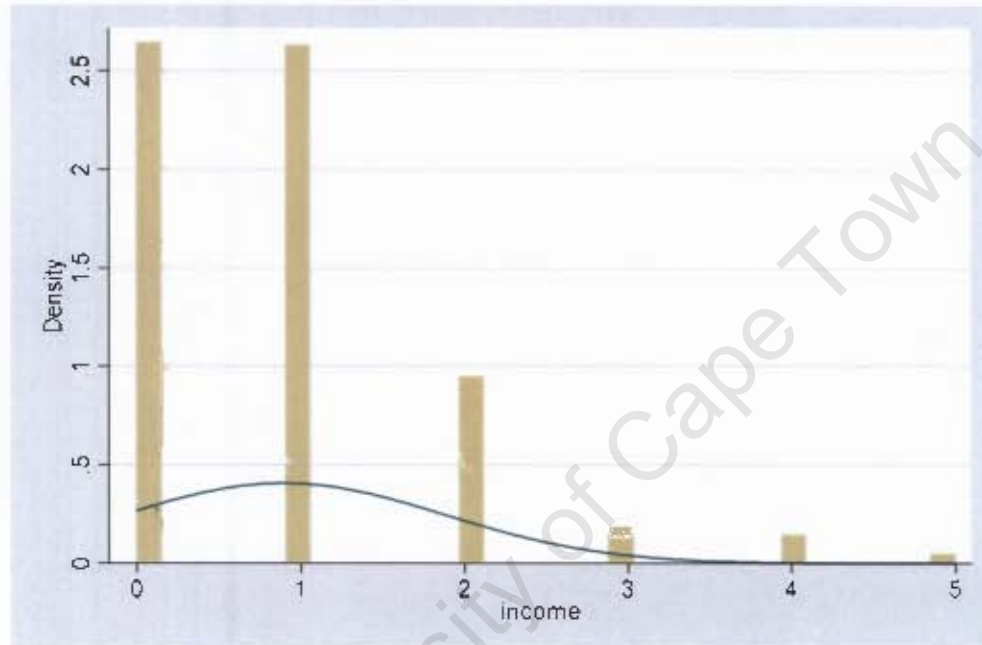
It is evident that embedding this discrete metric disregards the Euclidean income distance that captures income inequalities, which is not entirely relevant for this study as we are interested in looking at the yawning income gaps across regions as a possible explanation for the probability of conflict. Thus if we were interested in looking purely at ethnicity distances and the resultant link to conflict, this DP index would be more instrumental.

For a more relevant formulation, the parameters α and k are embedded into the formulation to distinguish between a polarization measure and inequality measures. If $\alpha=0$ and $k=1$, we get a discrete Gini index which fails to capture ethnic diversity. On the contrary, this can be

distinguished from a general polarization measure where $\alpha > 0$ and to satisfy the properties postulated by Reynal-Querol and Matlavo (2002) we assume specifically that $\alpha = 1$ and $k = 4$. This is because when $\alpha = 1$, the only k that normalizes the DP index between 0 and 1 is $k = 4$. Therefore the DP index simplifies further to:

$$DP_{(1,4)} = 1 - \left(\sum \left(0.5 - \prod_i \left| 0.5 \right|^{2 \times \prod_i} \right) \right)$$

Figure 8: Overall income distribution of representative survey sample



Source: Author, 2009 using Stata 10

Figure 7 represents the income distribution of all the individuals interviewed who form the nationally representative sample. It is clear that there are yawning gaps between the have's and the have-not's as illustrated by the large variation in distribution which is relatively skewed to the left. These income differences amongst respondents in our representative sample will be factored into the polarization index to identify the association with the probability of conflict in all regions.

Group-based coefficient of variation of income

In order to perform logistic regressions that account for a between-group component of income differences, we apply the group-based coefficient of variation as a measure for differences in mean monthly income per region relative to the overall sample mean monthly income. This is because at lower levels of aggregation, the polarization variable is collinear with the region

variable (as it is used in constructing the index) and renders the regression modelling unfeasible. In this regard, we present a second model using GCOV to capture income differences which is justified by Mancini (2005) in the context of measuring income inequalities in the presence of more than two ethnic groups and a third model using GCOV plus the region dummies. Stewart, Brown and Mancini (2005) approve the GCOV as being an ideal measure as it is descriptive, sensitive to group size and measures inequality between groups. This is further supported by Kanbur (2007) who explains that using summary statistics such as the mean is robust in identifying varying distributions of income between groups. Thus, to define the GCOV variable for each region, we use the following formulation:

$$GCOV = \frac{1}{\bar{y}} \left(\sum_r p_r (\bar{y}_r - \bar{y})^2 \right)^{1/2}$$

In the equation above, \bar{y} is the sample mean income, p_r is the group r population share and \bar{y}_r is the group r mean value of income; r refers to region. Essentially, this group inequality measure is the variance divided by the mean and by squaring the deviations from the mean, this gives greater weighting to the extremes of our descriptive measure.

Control variables

a) Education

Empirically, more ethnically diverse counties and states in the United States spend less on public goods such that states with more ethnic heterogeneity produce lower high school graduation rates and less support for public education. Easterly (2001) adds on that in Kenya, there is less funding for primary schools in more ethnically diverse regions. In view of these findings, we shall include an education variable to test its explanatory power of the likelihood of conflict where educational attainment levels are lower. More importantly, we consider how a region predominantly inhabited by a more educated majority will affect the probability of conflict in that area. Education achievement was categorized according to the highest level of schooling completed – no schooling, primary, secondary and tertiary – for exploratory analysis. *Ceteris paribus*, we expect two different outcomes in the regression of the conflict index on education. Based on supporting evidence by Fedderke and Kularatne (2008), the more educated an individual, the greater their political aspirations which translates to a greater influence on the output produced by any given economy. In this way, this reasoning validates why an individual with higher education levels has more to gain by engaging in conflict to prevent this outcome. On the other hand, an individual with higher education levels is likely to reap more benefits from

his own productive capacity. As such, the opportunity cost of engaging in conflict may outweigh the gains from engaging in conflict.

b) Employment

In the wake of globalisation, the crisis of economic regulation in the industrialized world is reflected in high structural unemployment. It provides a fertile ground for the dynamic expansion of globalisation and proliferates violence and the resultant threat of it as a means to regulate economic transactions. In light of this theoretical view, we will test the statistical significance of unemployment as an explanation for the probability of conflict occurring in Kenya. Our expectations are that unemployment strata brings about fertile ground for conflict as it promotes group marginalisation where the benefits of growth are likely to be enjoyed by the privileged employed.

c) Land inequality

The Kenyan economy relies mainly on its primary sector, specifically the agricultural sector for its international trade. As a result, a large proportion of employment derives from farming activities or the primary sector as a source of income and gross domestic product, respectively. Since independence, there had been a notable change in equal access to land between provinces which would indirectly affect the inputs available to farmers altering income stability and so forth. Furthermore, an inequitable distribution of land resources distorts regional GDP if a region relies mainly on its primary sector as a source of income. As a result, the influence of inequality in land holdings is of great significance in Kenya where agriculture (amongst other forms of farming activities) accounts for a considerable proportion of economic output and employment. Moitui et. al (2008) notes that many Kenyans depend on land for their survival particularly those living in rural areas. Land inequality³ accompanied by poor land tenure legislation and poorly-defined property rights raise a multiplicity of socio-economic concerns. We therefore expect that increases in land inequality (assuming property rights are not well defined) will increase the probability of conflict.

³ Land inequality is defined as applied in the Kenya Integrated Household Budget Survey (2005/6), developed by the Society for International Development and refers to the disproportionate distribution of land based on land potential, tenure system, arability and carrying capacity. The appendix part (v) presents a table of changes in land inequality derived from the KIHBS survey data.

d) Rural / Urban divide

Although agriculture contributes largely to Kenya's GDP, the economic development over the years has shed light on the importance of access to housing in a municipal setting where policies are better targeted towards better sanitation and infrastructure, among other forms of regional development. Moreover, an urban-rural divide in any society reveals its spatial inequality and the literature maintains that such a divide reflects how the benefits of growth are enjoyed by elite communities living in urban areas. This would ultimately generate tension between those in urbanized settings and those in rural areas, thereby causing a greater propensity to conflict.

e) Age & Gender

On a global scale, the job market is an intricate setting to engage in as a new entrant especially in the advent of recessionary times. In many parts of the world especially the developing world, there are relatively few jobs on offer in the formal economy for the masses of young people reaching the age to enter the labour market. According to Peter (2004), unemployment rates (in the regular economy) of well above 50 % among young people between 15 to 25 years of age are commonplace in many countries. Peter (2004) adds on worldwide younger generations are predominantly affected by social exclusion. The age bias of this social exclusion may breed violence related to the need for urgent economic regulation to accommodate them in the labour market. Furthermore, an added element of violent crime is that not only is it characterized by this age bias but it is held that violence is also "statistically the preserve of males between 15 and 35 years" (Peter, 2004). As such we will test the explanatory power of these variables and observe the causal links if any, between age/gender and violence.

f) Region

We also factor in the region variable which is a good variable to use in this Kenyan case study because it aligns ideally with ethnic divides raising the prospect of group tensions. It is important to factor this variable into the overall model as it has been alleged as a source of intraprovincial tension. We shall test the explanatory power of region on the probability of conflict, with the expectation that ethnic alliances are likely to be formed in the resource-rich areas. The levels of household welfare vary by regions and hence dummies representing the eight Kenyan provinces are used to capture these regional variations. Separate models for each of the regions are also estimated.

4.4 Bivariate Analysis

4.4.1 Linking group identification to structural and class differences

For the purposes of this research, we are interested in looking at the interaction between polarization (characterized by income differences and ethnicity) and the probability of conflict in Kenya, *ceteris paribus*. In the preceding paragraphs, DP polarization is defined by an index which is a product of income inequality and region. Contrary to widespread belief, Kenyans self-defined identities do not derive purely from ethnic association but an interplay of other factors such as occupation, religion, class to name a few. Our main focus lies in understanding the interplay between ethnicity distances and class divisions. Thus we attempt to capture the relationship between economic inequality along ethnic distances and the resultant link to social unrest or conflict. In order to shape our understanding of this link, we undertake a bivariate analysis of the following variables:

Region/Identity group

The results indicate that respondents from the Rift Valley province (largest province in Kenya in geographical and population size) identified the most with a language/tribe/ethnic group and class, with 27% and 26% respectively. Further, within the region category, 51% of the respondents from Rift Valley identified with belonging to the region itself rather than assuming a national identity. Incidentally, taking into account all respondents in the sample, yields low levels of ethno-linguistic identification expressed by respondents, who identify most with their occupation (39% of the sample). This makes an interesting test of the hypothesis that as ethnicity does not predominantly characterize self-identification with a region, ethnicity divisions will not play a major role in understanding the probability of conflict.

Region/Household Income

On a national level, an analysis of the survey data confirms the massive maldistribution of income in Kenya. Generally, about 44% of the respondents earn less than \$US20 per month, yet 6% of the sample report a monthly income of about \$US200 (nearly ten-fold) (IRIN, 2008). Evidently, the inequality gaps are quite stark and reinforce findings by UNDP(2003) that while the poorest quintile receive 2.5% of total income, the richest quintile earn over 50% of total income. In terms of the ethno-linguistic groups, it was noted that about 6% of the respondents from the Nairobi region fell into the higher income brackets whereas 4% came from the Central

region. On the contrary, 84% of the respondents from the Western region received income less than the minimum wage whereas 3% of respondents in the same region received and monthly income greater than \$US200.

Identity group/Household Income

This analysis is particularly meaningful for this study as it highlights the interplay between group identification and income differences which addresses one of the key objectives of this research. Specifically, by exploring the differences in group identification we make some notable observations. Firstly, respondents in the sample who fall under income bracket income_1 i.e less than ksh5000 are notably more inclined to identify with an ethnic group than those respondents earning a monthly salary of say R25,000 (income_3 bracket). Further, individuals in the highest income bracket are almost five more times inclined to identify with a class group than those with no cash income.

Identity group/Education

Another interesting observation is that those respondents who have attained a tertiary education are more likely to identify themselves according to class (14%) in comparison to those without formal education (5%). Moreover, the latter respondents identify more with their ethno-linguistic group (19%) as compared to their educated counterparts of whom only 9% identify with an ethnic group.

4.4.2 Regional analysis using explanatory variables.

The association between region (used as a proxy for ethnicity) and the probability of conflict is a good starting point in developing our analysis as it sheds light on the propensity of individuals belonging to a certain ethnic group to engage in conflict. From the findings presented in table 2, we can form our expectations of the regions that have a greater propensity for conflict and further validate these expectations from the regression modelling thereafter.

Table 2 reflects the income differences in each region in terms of the mean monthly income, relative to the average income of all the regions. From this information, we will investigate the possible links between income disparities by region and the probability of conflict as hypothesized in the literature using logistic regression modelling in section 5.1.

Table 2: Indication of mean monthly income, by region.

region	mean monthly income (in Kenyan shillings)
Central	6644.878
Coast	4803.381
Eastern	5549.778
Nairobi	9897.396
North Eastern	6892.595
Nyanza	4042.586
Rift-Valley	7683.445
Western	6948.03
Average	6463.486

From table 2, we can see that Nairobi and Rift-Valley provinces boast the greatest average income, whereas the average income is the lowest in Nyanza province followed by the Coast province. A notable observation is that the North Eastern province records one of the higher average incomes relative to the other regions, albeit evidence from Kenya's HDI that indicates North Eastern has the second highest incidence of poverty i.e. where a vast majority of its residents live below the poverty line. Nyanza province records the greatest poverty incidence amongst its residents which is accurately reflected in its lowest average income figures. To emphasise on the income discrepancies per region, we observe the degree of income polarisation in each region using an index generated in the previous chapter. This set of indices is indicated on table 3 below.

Table 3: Indication of income polarization of each region, relative to the average level

POLARIZATION INDEX BY REGION	
region	mean
Central	0.992643
Coast	0.994054
Eastern	0.993429
Nairobi	0.99115
North Eastern	0.992486
Nyanza	0.994769
Rift-Valley	0.992034
Western	0.992452
Average	0.992877

Evidently, there is little or no variation in the polarization index within regions. All in all, we observe that all the regions are highly polarized which is an intuitive indication of the yawning gap between rich and poor irrespective of regional base in Kenya. More specifically, Nyanza, Coast and Eastern are the most polarized regions (reporting above average figures) with Nairobi being the least polarized region relative to the other regions.

In further understanding the divergent welfare levels of individuals on a provincial level, we can further validate the propensity of conflict explained by horizontal inequality in education. The accessibility and attainment level of education contributes largely to the welfare of society owing to the marginal economic benefits achieved from being more educated.

Table 4: Proportion of education level attained, by province

EDUCATION LEVEL ATTAINED, BY PROVINCE					
province	no formal schooling	primary	secondary	tertiary	Total
Central	5.74	31.76	43.58	18.92	100
Coast	20.29	51.69	21.74	6.28	100
Eastern	14.14	40.87	31.88	13.11	100
Nairobi	1.7	26.7	46.02	25.57	100
North Eastern	72.03	11.02	13.56	3.39	100
Nyanza	7.39	50.85	31.82	9.94	100
Rift-Valley	12.67	35.96	37.67	13.7	100
Western	6.62	34.19	47.79	11.4	100
Total	13.37	37.68	35.8	13.16	100

From table 4, we see that of all eight provinces: a greater proportion of respondents from Central(44%), Nairobi(46%), Rift-Valley(38%) and Western(48%) provinces have attained secondary education whereas majority of respondents from Coast(52%), Eastern(41%), Nyanza(51%) have only attained primary education. A stark finding is that about 72 (%) of respondents from North Eastern had no formal schooling.

Table 5: Proportion of respondents who are employed relative to those unemployed, by province.

EMPLOYMENT STATUS, BY PROVINCE			
province	employed	unemployed	Average
Central	11.95	13.09	12.36
Coast	7.35	11.12	8.72
Eastern	17.86	13.44	16.26
Nairobi	6.5	8.81	7.33
North Eastern	5.91	3.24	4.95
Nyanza	15.82	12.86	14.75
Rift-Valley	20.88	30.13	24.22
Western	13.72	7.3	11.4
Total	100	100	100

Looking at the employment status of respondents from the different regions is functional in showing the socio-economic inequalities prevalent in each region. From table 5, it is clear that a greater proportion of individuals from Eastern, North Eastern, Nyanza and Western provinces are unemployed relative to the average proportion of unemployed respondents from the other four provinces.

As described earlier, we expect that individuals who are younger than 35 years of age are more likely to engage in conflict than older counterparts above 35. In view of this expectation, we expect higher probabilities of conflict in Central, Coast, Nairobi, Nyanza, Rift-Valley and Western provinces as these regions report a large number of individuals falling into the conflict age-category as tabulated in Table 6.

Table 6: Age of respondents, by province

AGE OF RESPONDENTS, BY PROVINCE			
province	between 15-35 years	over 35 years	Total
Central	54.39	45.61	100
Coast	62.98	37.02	100
Eastern	47.69	52.31	100
Nairobi	68.18	31.82	100
North Eastern	45.83	54.17	100
Nyanza	55.68	44.32	100
Rift-Valley	60.96	39.04	100
Western	59.93	40.07	100

4.5 Model Specification

The major goal of this section is to develop a set of logistic estimations to test the hypothesis that the probability of the occurrence of conflict is determined in the presence of economic and social inequalities across regions in Kenya. In light of ethnic diversity in Kenya, we observe the probability of the occurrence of conflict as a result of differences in income, education, age, gender, land inequality, settlement area, region and employment status on a national and regional level. Based on the polarization index constructed, we also assess its resultant link to conflict potential overall.

Based on the stated definitions of the dependent and explanatory variables and correlation analyses, we formulate four general models as:

$$p_i = F(Z_i) = \frac{1}{1 + e^{-Z_i}}$$

where $Z_i = \beta_1 POL_i + \beta_2 EDUC_i + \beta_3 RURAL_i + \beta_4 LAND_OWN_i + \beta_5 AGE_i + \beta_6 UNEMPLOYED_i + \beta_7 MALE_i$.

Therefore the probability of the occurrence of conflict is determined by the function:

$$p_i = F(Z_i) = \frac{1}{1 + e^{-\beta_1 POL_i - \beta_2 EDUC_i - \beta_3 RURAL_i - \beta_4 LAND_OWN_i - \beta_5 AGE_i - \beta_6 UNEMPLOYED_i - \beta_7 MALE_i}}$$

Using this structure, we shall also test the hypothesis that conflict occurs in the presence of socio-economic inequalities and regional differences by estimating three other models:

where $Z_i = \alpha GCOV_i + \beta EDUC_i + \gamma RURAL_i + \beta_4 LAND_OWN_i + \gamma AGE_i + \theta UNEMPLOYED_i + \mu MALE_i + e_i$.

$$p_i = F(Z_i) = \frac{1}{1 + e^{-\alpha GCOV_i - \beta EDUC_i - \gamma RURAL_i - \beta_4 LAND_OWN_i - \gamma AGE_i - \theta UNEMPLOYED_i - \mu MALE_i}}$$

where $Z_i = \alpha GCOV_i + \beta EDUC_i + \gamma RURAL_i + \Omega AGE_i + \theta UNEMPLOYED_i + \mu MALE_i + \beta_{10} REGION_i + e_i$.

$$p_i = F(Z_i) = \frac{1}{1 + e^{-\alpha GCOV_i - \beta EDUC_i - \gamma RURAL_i - \Omega AGE_i - \theta UNEMPLOYED_i - \mu MALE_i - \beta_{10} REGION_i}}$$

Where $Z_i = \beta_2 EDUC_i + \beta_3 RURAL_i + \beta_4 LAND_OWN_i + \beta_5 AGE_i + \beta_6 UNEMPLOYED_i + \beta_7 MALE_i + \beta_{10} REGION_i + e_i$.

$$p_i = F(Z_i)$$

$$= \frac{1}{1 + e^{-\beta_0 EDUC_i - \beta_1 RURAL_i - \beta_2 LAND_OWN_i - \beta_3 AGE_i - \beta_4 UNEMPLOYED_i - \beta_5 MALE_i - \beta_6 REGION_i}}$$

We also specify a model that looks at the region as the unit of analysis:

Where $Z_i = \alpha INC_i + \beta EDUC_i + \gamma RURAL_i + \pi LAND_OWN_i + \Omega AGE_i + \theta UNEMPLOYED_i + \mu MALE_i + e_i$

$$p_i = F(Z_i) = \frac{1}{1 + e^{-\alpha INC_i - \beta EDUC_i - \gamma RURAL_i - \pi LAND_OWN_i - \Omega AGE_i - \theta UNEMPLOYED_i - \mu MALE_i}}$$

4.5.1 Expected signs and correlations

We briefly highlight the correlations between the dependent variable-conflict and explanatory variables in comparison to the expected signs, based on some of the theoretical arguments explored in chapter 2.

Variable	Actual sign	Expected sign
Polarisation	(+)	(+)
GCOV	(+)	(+)
education	(+)	(+)
• Primary	(-)	(+)
• Secondary	(+)	(+)
• tertiary	(+)	(+)
unemployed	(-)	(+)
Δ in land_own	(+)	(+)
age<35	(+)	(+)
male	(+)	(+)
region dummy	(+)	(+)
-in the presence of socio-economic inequalities		
rural	(-)	(-)

Table 7: Code Sheet for the Conflict/Economic Inequality Study

Variable	Description	Codes/Values	Name
1	Conflict Index	0=low 1=high	CONFLICT
2	Polarization Index (Interaction btwn monthly average proportionate income and region)	$0 < \text{pol} < 1$	POL
3	Group-based variation in income	In brackets	GCOV
4	Educational attainment level per region	0=no schooling 1=otherwise	EDUC
5	Rural/Urban Divide	0=urban 1=rural	RURAL
6	Household income	In brackets	INC
7	Age	0= age>35 1=age<=35	AGE
8	Gender	0=Female 1=Male	MALE
9	Change in land inequality	(%)	LAND_OWN

We also include the region variable denoted by REGION_i , where $i=1,2..8$ accounts for all 8 provinces in Kenya. The region variable is estimated by dummy variables where the Central region is the base category.

CHAPTER FIVE: ANALYSIS OF RESULTS

5.1 Empirical Analysis

This section seeks to present the findings from the logistic regressions of the specified model presented in the preceding chapter. The null hypothesis is H_0 : socio-economic inequalities do not have a significant impact on the probability of the conflict occurring on a national and regional level, against the background of our theoretical expectations. Thus controlling for individual and household characteristics and a few socio-demographic variables such as region, age, gender, we shall test the odds in favour of conflict occurring at the conventional 1%, 5% and 10% levels of significance.

5.1.1 Individual Significance

Table 8: Logistic regression results for conflict model estimated on a regional level

	Central	Coast	Eastern	Nairobi	North Eastern	Nyanza	Rift Valley	Western
h/hold income	1.000049 (0.029)**	1.000035 (0.218)	1.000048 (0.039)**	0.999983 (0.356)	0.999943 (0.529)	0.999981 (0.491)	1.000017 (0.127)	0.999987 (0.584)
_leduc_1	0.805899 (0.776)	0.536340 (0.227)	1.50972 (0.618)	0.73143 (0.835)	0.802789 (0.888)	0.333545 (0.128)	1.573281 (0.449)	1.27449 (0.853)
_leduc_2	0.587153 (0.486)	0.692618 (0.546)	3.307482 (0.142)	0.569316 (0.708)	2.486674 (0.560)	0.230666 (0.048)**	1.393725 (0.582)	1.423545 (0.788)
_leduc_3	0.365629 (0.278)	0.045933 (0.011)***	3.377057 (0.180)	1.530236 (0.781)	8.569921 (0.337)	0.546625 (0.487)	1.873022 (0.343)	0.816652 (0.888)
male	1.874183 (0.051)**	2.59432 (0.012)***	1.161912 (0.672)	1.738873 (0.218)	9.575093 (0.181)	3.248418 (0.000)***	1.55102 (0.082)*	2.879353 (0.032)**
unemployed	0.842326 (0.590)	0.664439 (0.283)	0.744050 (0.424)	1.370408 (0.499)	2.844742 (0.399)	0.282749 (0.000)***	0.857952 (0.548)	0.597604 (0.293)
age_35	1.602275 (0.153)	1.946999 (0.102)	1.27849 (0.497)	1.069593 (0.881)	4.322531 (0.343)	0.824477 (0.550)	2.719782 (0.000)***	0.642303 (0.390)
rural	1.122344 (0.807)	1.813868 (0.165)	0.322177 (0.040)***	-	0.145663 (0.187)	1.077779 (0.887)	0.623781 (0.142)	3.823167 (0.057)*
Pseudo R ²	.0381	0.1109	0.1145	0.0418	0.3333	0.1357	0.0555	0.0886
Prob > chi ²	(0.2326)	(0.0042)---	(0.0006)---	(0.4806)	(0.1222)	(0.0000)---	(0.0021)---	(0.1822)
log likelihood	-132.341	89.714	-105.944	-74.645	-12.714	131.161	-205.893	-58.424

Note: The p-value of the z-statistic is indicated in parentheses. Statistical significance indicated by *** at 1%, ** at 5% and * at 10% conventional levels.

The regression results shown in table 8 display individual estimations at the regional level, and the overall significance of each model is shown in the last row. The pseudo R^2 is not necessarily a good indicator of goodness of fit as given by the adjusted R^2 in OLS regression. However, the pseudo R^2 provides a quick way to compare the fit of different models for the same dependent variable. Hamilton (2003) explains that the pseudo R^2 lacks the straightforward explained-variance interpretation of true R^2 in OLS regression. Although the pseudo R^2 in these estimations is relatively low, there is a strong statistically significant relationship between the probability of conflict and the explanatory variables at the 1% level of significance, *ceteris paribus*.

From the results in table 8, we observe that Central, Nairobi, North Eastern and Western provinces are not statistically significant at any conventional level of significance, and we can reject the hypothesis that the likelihood of conflict occurring is affected by any of the explanatory variables in these individual regions. On the other hand, we conclude that the odds in favour of conflict occurring is greater in the Coast, Eastern, Nyanza and Rift-Valley provinces. This is explained by the income inequalities prevalent in these regions, attaining higher levels of education, being a male, being unemployed and residing in a rural settlement area. These findings are corroborated by the results in table 2, 3, 4 and 5 which reveal that respondents from the Coast, Nyanza and Eastern provinces have the lowest income earnings and lowest level of education relative to the other regions. The fact that the Rift-Valley province is also statistically significant is an interesting finding as respondents from this region have attained above average income levels and education levels. A possible explanation for this finding could be drawn from the fact that there is a relatively significant proportion of unemployed respondents from the Rift-Valley province, which could be significantly larger than higher income earners or more educated respondents. All in all, the regression models for these regions reveal very robust findings and for each of these four regions the conflict models are highly statistically significant at the 1% level.

For the Central province, the odds in favour of conflict increases if income increases and an individual is a male; in this case, the odds in favour of conflict are statistically significant at the 5% level of significance. However, the likelihood of conflict due to all the other explanatory variables is not statistically significant. In the Coast province, the odds in favour of conflict occurring is positively associated with attaining a tertiary education and being a male at the conventional 5% and 10% levels of significance. For the Eastern region: if an individual is a male and the higher the income, the greater the likelihood of conflict at the 1% and 5% level of significance respectively. The propensity to engage in conflict for individuals from Nairobi and

North Eastern provinces is not related to any of the explanatory variables in question at any conventional level of significance. In Nyanza province, the likelihood of conflict is highly related to attaining a secondary education relative to no schooling, being a male and being unemployed at the 5% and 1% levels of significance respectively. The Rift-Valley province reveals a strong association between being a male under the age of 35 years of age and an increased probability of conflict at the 10% and 1% level of significance, whereas we find that no statistical association or significance is found with the other explanatory variables. Similarly, in the Western region, the odds in favour of conflict as a result of being a male are statistically significant at the 5% and further, the odds of conflict occurring increase if an individual resides in a rural settlement area at the 1 % levels of significance. However none of the other explanatory variables are statistically significant for the Western province. To a large extent, the association between the stated explanatory variables and the odds in favour of conflict is insightful for the Coast, Eastern, Nyanza and Rift-Valley regions, and conforms to expectations whereby areas that reveal high within-group economic inequality will have a bias towards ethnic conflict. This provides a good justification within the sample for the odds in favour of conflict occurring in these regions.

5.1.2 Joint Significance

Table 9: Logistic regression results for all conflict models estimated on a national level

Conflict	Model 1 (captures within group income var)	Model 2 (captures btwn group income var)	Model 3 (GCOV + region differentials)	Model 4 (only includes region differentials)
Polarisation	1.48e ⁻⁴⁹ (0.088)*			
GCOV		6.860969 (0.111)	0.0075719 (0.690)	
education:				
• primary	1.377629 (0.057)*	1.374791 (0.101)*	1.296494 (0.0.219)	1.308025 (0.135)
• secondary	1.29069 (0.138)	1.285115 (0.205)	1.189785 (0.428)	1.245823 (0.235)
• tertiary	1.757406 (0.004)***	1.616945 (0.035)**	1.507969 (0.099)*	1.675035 (0.014)*
unemployed	0.7598826 (0.004)***	0.6120543 (0.000)***	0.6265245 (0.000)***	0.765636 (0.006)***
land_own	9.53717 (0.000)***	4.817406 (0.000)***		

age: < 35 yrs	1.492646 (0.000)***	1.315889 (0.015)***	1.305118 (0.02)**	1.492461 (0.000)***
male	1.623024 (0.000)***	1.735733 (0.000)***	1.770584 (0.000)***	1.635718 (0.000)***
Rural area	0.6222344 (0.000)***	0.6641088 (0.004)***	0.9072673 (0.551)	0.818427 (0.143)
region:				
• Coast			2.295427 (0.234)	1.699507 (0.007)***
• Eastern			0.556411 (0.234)	0.4578292 (0.000)***
• Nairobi			2.1695113 (0.622)	1.016084 (0.946)
• N. Eastern			0.5301908 (0.034)**	0.528276 (0.035)**
• Nyanza			3.346637 (0.424)	1.771826 (0.001)***
• Rift Valley			1.749655 (0.558)	0.9405107 (0.698)
• Western			0.8206696 (0.1442)	0.8932753 (0.548)
Summary Statistics:				
Pseudo R ²	0.0513	0.0646	0.0753	0.0589
Prob > chi ²	(0.0000)***	(0.000)***	(0.000)***	(0.000)***
Log likelihood	-1403.6381	-1048.8226	-1036.804	-1392.4068

Note: The p-value of the z statistic ($p > |z|$) is indicated in parentheses. Statistical significance indicated by *** at 1%, ** at 5% and * at 10% conventional levels. The base categories of the dummies are as follows: education dummy-no formal schooling, for the region dummy-Central region, age-individuals older than 35 years, gender-female, settlement type-urban.

From the results in table 9, we observe that the odds in favour of conflict occurring due to income polarisation within regions, variability in income between regions, age, gender, land inequality, unemployment, higher education and rural settlement type are all individually statistically significant at the 1% level of significance. Moreover, we find that the odds in favour of conflict due to ethnic diversity in four regions (Coast, Eastern, North Eastern, Nyanza) are also highly statistically significant at the 1% level of significance. On the contrary, the odds in favour of conflict occurring due to regional attributes, strictly referring to Nairobi, Rift-Valley and Western provinces are not statistically significant. The odds ratios depicted in the regression results provide a good understanding of the relationship between the dependant variable and each explanatory variable. Intuitively, we find that there is a positive relationship between the

probability of conflict and polarisation, an individual being male and under 35 years of age, land inequality within a region and attaining a higher education. Further, there exists a positive relationship between the probability of conflict and regional attribute pertaining to Central, Nairobi, Nyanza and Coast provinces. On the other hand, there is a negative relationship between the propensity of conflict and income, an individual being unemployed or living in a rural area. Another negative association is found between the probability of conflict and ethnic diversity in Rift-Valley, Eastern, Western and North Eastern provinces.

From the regression output of model 1 in table 9, we see that the odds in favour of conflict occurring due to income polarisation is statistically significant at the 10% level of significance. To a large extent, the observed negative relationship conforms to economic theory and we can infer that lower within-group income polarisation provides a strong stimulus for conflict. This is explained by Esteban and Ray (2008) who assert that class divisions create groups that display strong within-group economic homogeneity and this basis of division provides a potential explanation for the probability of conflict. Intuitively, the age, gender and land inequality variables are highly statistically significant at the 1% level of significance and carry the expected positive sign according to the literature. In terms of the education variable, we observe ambiguous findings in that primary and tertiary education are statistically significant relative to no schooling in explaining the odds in favour of conflict, with a higher educational attainment bearing a greater statistical significance in explaining a higher probability of conflict. Furthermore, we find the odds that an unemployed individual dwelling in a rural area will engage in conflict are highly statistically significant and these variables display a negative association with the odds in favour of conflict. These findings conform to our expectations due to the fact that employment and urbanisation in society fuel greater inequalities which provide a strong impetus for conflict.

Model 2 in table 9 estimates the relationship between the propensity of conflict and group variation in income between groups, *ceteris paribus*. This model reveals that the group-based coefficient of variation is not statistically significant in explaining the odds in favour of conflict. However, all the other indicators of economic and social inequalities are highly statistically significant and conform to our theoretical expectations. Overall, the indicators of conflict are jointly highly statistically significant at the 1% level of significance and tell us that the group-based variation in income between regions explains the odds in favour of conflict on a national level, *ceteris paribus*. Model 3 extends model 2 by incorporating dummies for the region variable. Based on these alterations in the explanatory variables of the model, we

attain very intuitive results where the odds in favour of conflict are positive and highly statistically significant as a result of income variations between regions, individuals attaining a tertiary education relative to no schooling, being under 35 years of age, being a male, being unemployed and not living in a rural area. The land inequality variable was dropped at this stage owing to collinearity with the other explanatory variables, particularly the region dummy variable. Although, we had noted from the second model that land inequality has a positive and strong statistical affiliation with the odds in favour of conflict.

The fourth model that we employ is used to test the contribution of each individual region to the probability of conflict. We find that the Coast, Eastern and Nyanza provinces are positively related to the probability of conflict at a 1% statistical significance level, which further reinforces our findings from table 8. This model is useful in showing us the regions which are more inclined to participate in conflict, in the absence of income inequalities. Ironically, the Coast and Nyanza provinces were the least economically developed regions based on 2003 figures and exhibited the most divergent social inequalities overall in the sample. The previous analysis of figure 3, table 2 and table 3 has shown that Nairobi, Rift-Valley and Eastern provinces exhibit the greatest income inequalities which validate further the view by Esteban and Ray (2008) that ethnic alliances are more predisposed to form in the presence of economic inequality. However, it should be noted that this model is relatively weak in testing our hypothesis although offers valuable insight. The most robust models are model 1, 2 and 3 which show us the relationships of the within-region and between-region income inequalities in explaining the odds in favour of conflict. Evidently, these two components play a significant role in explaining the odds in favour of conflict where the level of between-group inequalities is positively related and highly significantly related to the probability of conflict occurring, yet negatively associated to within-group inequalities. This finding corroborates the hypothesis by Zhang and Kanbur (1999)⁴ as explained in chapter 2. From the regression results presented in table 9, we can conclude that we reject the null hypothesis that socio-economic inequalities do not have a significant impact on the probability of the conflict occurring on a national and regional level at the 1% level of significance. Therefore, we ascertain that socio-economic inequalities have a significant influence on the odds in favour of conflict occurring and in the presence of divergent levels of income, education, land equality and unemployment; we expect a bias towards ethnic conflict in line with the argument by Esteban and Ray (2008). In addition

⁴ A more elaborate explanation can be found in the paper by Zhang X., and Kanbur R., 1999. Which regional inequality? The evolution of rural/urban and inland-coastal inequality in China from 1983 to 1995. *Journal of Economic Papers* 50(4): 563-573.

to these factors, we also conclude that socio-demographic differences in age and gender also play a crucial role in explaining the probability of conflict occurring. On a regional level, we observe that ethnic conflict is likely in four main regions namely the Coast, Eastern, Nyanza and Rift-Valley provinces, owing to the high levels of socio-economic inequalities in these particular regions relative to the other regions.

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CHAPTER 6: POLICY RECOMMENDATION AND CONCLUSION

6.1 Policy Recommendation

These results reinforce key theorists studies on conflict and inequality studies such as Esteban and Ray (2008) where they conclude that in the presence of economic inequality, there is a logical bias towards ethnic conflict. However, these findings are somewhat contrasted by theorists such as Lichbach (1989) who provides examples that show limited impact on the inequality-conflict link. The contributions by these authors amongst others based on theoretical arguments have been empirically motivated in this study, where we observe a positive association between conflict potential and the level of between-group inequalities. In the Coast, Eastern, Nyanza and Rift-Valley regions we observed stark differences in economic and social inequalities specific to these regions in the preceding chapters. On the other hand, we find that there is a statistically significant negative relationship between the level of within-group inequalities and the probability of conflict. The empirical results provide a close examination of the relative importance of addressing these horizontal inequalities coupled with structural cleavages towards achieving economic and political stability in Kenya. The notable differences in the relative impact of socio-economic inequalities on conflict in Kenya can be justified by the fact that there are specific conditions in each province, stemming from the nature of household characteristics. The heterogeneous nature of these provinces implies that economic activities and household characteristics are inherently diverse.

In light of this view, a key recommendation for Kenya's policy-makers is to adopt policies which reduce rather than increase the salience of identities particularly in these regions which are characterised by divergent socio-economic conditions. This can be validated by the fact that there is a marked difference between the effect of within-group inequality and between-group inequality on the probability of conflict. Thus, these policies should primarily target deprived groups which are large in number as opposed to a one-size-fits-all approach for all the eight regions which have access to divergent levels of resources. Furthermore, it is important to accommodate the extent to which the elite are incentivised to mobilisation if too many resources are diverted towards the deprived groups leaving a deficit for the privileged. Malaysia and Northern Ireland depict two cases that successfully adopted policies towards reducing horizontal inequalities and remain relatively peaceful (Langer, Brown & Stewart: 2007).

6.2 Conclusion

A key finding is that the probability of conflict in Kenya is increased by higher income inequalities, divergent levels in education, unemployment between groups, demographic attributes such as gender and age, settlement area and land inequality. Furthermore, as the distribution of resources and income distribution is not uniform across all regions, it has been critical to apply the analysis at the regional level which provided us with the benefit of regional homogeneity. In this light, we note the sample evidence of the notable differences in the impact of horizontal inequalities on the probability of conflict across the Kenyan eight provinces. Notably, the conflict models for the Coast, Eastern, Nyanza and Rift-Valley provinces indicate a positive association between income distribution, educational and employment strata and socio-demographic variables and the odds in favour of conflict; which are jointly highly statistically significant at the 1% level of significance.

Overall, the results provide strong evidence that horizontal inequalities amongst Kenyans, particularly social and economic inequalities which capture individuals well-being and societal welfare, will affect an individual's propensity to engage in conflict. Ultimately, this results in a significant negative impact on economic development and stability if the root causes are not dealt with effectively. Although the ethnic divisions formed in Kenya have been deeply influenced by its colonial past, it appears that identity based on ethnic background still plays a crucial role in the country's evident polarisation providing another channel for conflict. It is clear that the link between the level and pattern of social conflict and the distribution of resources is positive and if the root causes of conflict are not addressed, one of the leading socioeconomic impacts of economic inequality i.e. political conflict will prevail.

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APPENDICES

(i) Correlation Matrix results for variables used to determine conflict index

	Q25d	Q25e	Q76	Q41b	Q45k	Q47	Q71c
Q25d	1.0000						
Q25e	0.2700	1.0000					
Q76	0.0764	0.3445	1.0000				
Q41b	-0.0219	-0.0065	-0.005	1.0000			
Q45k	-0.0565	-0.0657	-0.025	0.1452	1.0000		
Q47	-0.0378	-0.0294	-0.0004	0.1508	0.1062	1.0000	
Q71c	0.0558	0.0336	-0.0082	0.1538	0.0278	-0.0024	1.0000

These variables refer to questions asked as part of the Afro barometer Survey. The respective questions are stated below.

Q25 d: Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance: Used force or violence for a political cause?

Q25 e: Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have done any of these things during the past year. If not, would you do this if you had the chance: Attended a demonstration or protest march?

Q76: Please tell me which of the following statements is closest to your view. Choose Statement A or Statement B.

A: The use of violence is never justified in Kenyan politics.

B: In this country, it is sometimes necessary to use violence in support of a just cause

Q41b: In this country, how often: Does competition between political parties lead to conflict?

Q45k: How well or badly would you say the current government is handling the following matters, or haven't you heard enough about them to say: Resolving conflicts between communities?

Q47: What proportion of the country's problems do you think the government can solve?

Q71c: In your experience, how often do violent conflicts arise between people: Between different groups in this country?

(ii) Principal Component Analysis Results

Factor analysis/correlation

Number of obs = 2398

Method: principal-component factors

Retained factors = 3

Rotation: (unrotated)

Number of params = 18

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	1.50808	0.21187	0.2154	0.2154
Factor 2	1.29621	0.25767	0.1852	0.4006
Factor 3	1.03854	0.13744	0.1484	0.5490
Factor 4	0.90110	0.01462	0.1287	0.6777
Factor 5	0.88648	0.11333	0.1266	0.8043
Factor 6	0.77314	0.17669	0.1104	0.9148
Factor 7	0.59645	-	0.0852	1.0000

LR Test: independent vs saturated: $\chi^2(21) = 695.92$ Prob> $\chi^2 = 0.0000$

(iii) Factor loadings (pattern matrix) and unique variances

Variable	Factor 1	Factor 2	Factor 3	Uniqueness
Q25d	0.5733	0.1073	-0.2813	0.5808
Q25d	0.7893	0.2008	0.1048	0.3257
Q25e	0.6365	0.1946	0.3856	0.4082
Q41b	-0.1699	0.7144	-0.1193	0.4465
Q45k	-0.2851	0.4910	0.2460	0.6172
Q47	-0.1991	0.5022	0.4476	0.5078
Q71c	0.0387	0.4504	-0.7243	0.2710

(iv) GCOV Calculation

Region (R)	y	Yr	(Yr-y)	(Yr - y)^2	n	P	pr	GCOV
Central	6424.161	6644.878	220.717	48715.994	0.131	31870000	4174970	67.86962544
Coast	6424.161	4803.381	-1620.78	2626927.8	0.087	31870000	2772690	561.8594518
Eastern	6424.161	5549.778	-874.383	764545.63	0.163	31870000	5194810	359.0962983
Nairobi	6424.161	9897.397	3473.236	12063368	0.074	31870000	2358380	538.9149042

North								
Eastern	6424.161	6892.595	468.434	219430.41	0.154	31870000	4907980	150.5625776
Nyanza	6424.161	4042.586	2381.575	5671899.5	0.029	31870000	924230	566.3631986
Rift-Valley	6424.161	7683.445	1259.284	1585796.2	0.243	31870000	7744410	456.101885
Western	6424.161	6948.03	523.869	274438.73	0.119	31870000	3792530	146.8336272

(v) **Change in Land Inequality over Time, all Households, by Province and Nationally, Gini coefficient, 1996 -2005/6**

	1997	2005/6	Percentage change
National	0.612	0.832	35.9%
Nairobi	0.757	0.993	31.1%
Central	0.546	0.744	36.4%
Coast	0.500	0.865	73.1%
Eastern	0.601	0.731	21.6%
Nyanza	0.475	0.815	71.8%
Rift Valley	0.642	0.870	35.4%
Western	0.579	0.769	32.7%